CHEMICAL AND ENGINEERING DICTIONARY

The
CHEMICAL and ENGINEERING DICTIONARY

A compact reference dictionary for chemical engineers, technicians and plant executives who wish to be kept up-to-date on the new chemical terms and expressions.

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Directions for the Use of This Dictionary

Trade names and proper names are capitalized.

The data for the chemical compounds are stated in the following order: name; synonyms; chemical formula; molecular weight; color and crystalline form; melting point; boiling point; and solubility.

The chemical structural formula is given, except for a few compounds such as propyl, butyl, and amyl which are assumed to be of normal structure.

All temperatures are in degrees Centigrade.

The boiling point is for normal atmospheric pressure (760 mm. of mercury), unless otherwise shown by a superscript. For example: 285 ^{810} denotes a boiling point of 285° C. at a pressure of 810 mm.

Decomposition on heating is indicated by the abbreviation *d.*, e.g. 160d., means a decomposition at 160° C.

The abbreviations used in this dictionary are listed facing the first page of the definitions.

Loss of water of crystallization is shown by $-H_2O$, e.g. $-3H_2O$, 360 signifies the loss of three molecules of water at 360° C.

When properties such as boiling and melting points are given they may be for commercial rather than for pure products and slight differences must be expected.

The solubility of a liquid or a solid is only noted in water and alcohol because of space limitation. It may be soluble in many other solvents.

The hardness of the minerals are given in terms of the Mho scale.

Some abbreviations have been indexed like other words. Turn to the appendix for a complete list of "Abbreviations and Contractions."

Consult the section on "Symbols" for mathematical, Greek, apothecary, and miscellaneous symbols.

For convenience in special study and for those not familiar with the nomenclature of organic chemistry, the organic radicals, as prefixes to a compound, appear following the section on the nomenclature of organic compounds. All the long dashes that are placed in the formula signify a valence bond. The symbol $\simeq$ stands for "is equivalent to."

Double compounds are not listed twice. If not found under the first name it will be found under the name of the other metal.

In searching for *inorganic* compounds beginning with *meta, ortho, pyro, mono, di, tri*, etc., turn to the base word. For example: di-ammonium phosphate is listed as ammonium phosphate, di-.

In the organic chemicals the important groups are placed first, other groups follow alphabetically. Look for the parent compound. For example: benzene, 1-tert-butyl-3,5-dimethyl-2,4,6-trinitro-; ketone, amyl methyl. (The underlined letters indicate the words used in alphabetizing.)

In alphabetizing, the organic compounds were treated as one word.

Esters of acids will be found under the name of the corresponding acid: as acetic acid, allyl ester is used in filing instead of allyl acetate.

Symbols like o-; m-; p-; α; 8; π; 2, 2-; N; are disregarded in filing the *organic* compounds since they are symbols of position. Bis; di; tri; etc., are retained because they indicate number of groups or the structure.

Inorganic and organic metallic derivatives are listed under the metal. The organic radical is placed *after* the inorganic anion. For example: gallium amide, dimethyl-; germanium bromide, triphenyl-. Diisoamyltin dichloride has been listed as: tin chloride, di-, diisoamyl-.

Ferrous and ferric salts will be found under iron, stannous and stannic under tin, and aurous and auric under gold.

For the convenience of the reader, gums are listed under gum. The same procedure is followed for oil, resins, etc. Complete cross-references are provided.

The Nomenclature of Organic Chemistry

It is possible in the domain of organic chemistry to give several names to the same compound. This has the great advantage of permitting clear expression of thought and of rendering it easier to bring out analogies in structure wherever this is useful. But on the other hand the multiplicity of names for the same substance constitutes a serious obstacle in the classification of organic compounds.

The system of nomenclature followed in this dictionary is based on the International Union Rules taken from the Definitive Report of the Commission on the Reform of the Nomenclature of Organic Chemistry which was adopted by this Commission and by the Council of the International Union of Chemistry at Liege in 1930. For the full text and comments, see Journal of the American Chemical Society 55, 3905-25 (1933).

I. General

1. As few changes as possible will be made in terminology universally adopted.

II. Hydrocarbons

2. The ending *ane* is adopted for saturated hydrocarbons. Open-chain hydrocarbons will have the generic name *alkanes*.

The name "alkane" is better and shorter than "paraffin," especially since the latter term is now so commonly applied to a solid mixture.

3. The present names of the first four normal saturated hydrocarbons (methane, ethane, propane, butane) are retained. Names derived from the Greek or Latin numerals will be used for those having more than four atoms of carbon.

4. Branched-chain hydrocarbons are regarded as derivatives of the normal hydrocarbons; their names will be referred to the longest normal chain present in the formula by adding to it the designations of the side chains. In case of ambiguity, or if a simpler name would result, that chain which admits of the maximum of substitutions will be selected as the fundamental chain.

5. In case there are several side chains, the order in which such chains are named will correspond to the order of their complexity. The chain having the greatest number of secondary and tertiary atoms will be considered the most complex. The alphabetic order may also be followed in such cases.

6. In the names of open-chain unsaturated hydrocarbons having one double bond the ending *ane* of the corresponding saturated hydrocarbon will be replaced by the ending *ene;* if there are two double bonds,

the ending will be *diene*, etc. These hydrocarbons will bear the generic names *alkenes*, *alkadienes*, *alkatrienes*, etc. Examples: propene, hexene, etc.

7. The names of triple-bond hydrocarbons will end in *yne*, *diyne*, etc. They will bear the generic name *alkynes*. Examples: propyne, heptyne, etc.

8. If there are both double and triple bonds in the fundamental chain the endings *enyne*, *dienyne*, etc., will be used. The generic names of these hydrocarbons will be *alkenynes*, *alkadienynes*, etc.

9. Saturated monocyclic hydrocarbons will take the names of the corresponding open-chain saturated hydrocarbons, preceded by the prefix *cyclo*. They will bear the generic name *cycloalkanes*.

10. When they are unsaturated, rules 6-8 will be applied. However, in the case of partially saturated polycyclic aromatic compounds the prefix *hydro*, preceded by *di-*, *tetra-*, etc., will be used. Example: dihydroanthracene.

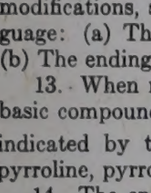
11. Aromatic hydrocarbons will be denoted by the ending *ene* and will otherwise retain their customary names. However, the name *phene* may be used instead of *benzene*.

III. Fundamental Heterocyclic Compounds

12. The endings of customary names, endings which do not correspond to the function of the substance, will undergo the following modifications, so far as they are in accord with the genius of each language: (a) The ending *ol* will be changed to *ole*. Example: pyrrole. (b) The ending *ane* will be changed to *an*. Example: pyran.

13. When nitrogenous heterocycles not having the ending *ine* give basic compounds on progressive hydrogenation, such derivation will be indicated by the successive endings *ine*, *idine*. Examples: pyrrole, pyrroline, pyrrolidine; oxazole, oxazoline.

14. The ending *a* is adopted for hetero atoms occurring in a ring. Oxygen will accordingly be indicated by *oxa*, sulfur by *thia*, nitrogen by *aza*, etc. The letter *a* may be elided before a vowel. Examples: thiadiazole, oxadiazole, thiazine, oxazine.



While the universally accepted names of heterocyclic compounds are retained, the names of other heterocyclic compounds are derived from that of the corresponding homocyclic compound by adding to it the names of the hetero atoms ending in *a*. Example: 2, 7, 9- triazaphenanthrene.

IV. Simple Functions

15. Substances of simple function are defined as those containing a function of one kind only, which may be repeated several times in the same molecule.

16. When there is only one functional group, the fundamental chain will be selected so as to contain this group. When there are several functional groups the fundamental chain will be selected so as to contain the maximum number of these groups.

17. Halogen derivatives will be designated by the name of the hydrocarbon from which they are derived, preceded by a prefix indicating the nature and number of the halogen atoms.

18. Alcohols and phenols will be given the name of the hydrocarbon from which they are derived, followed by the suffix *ol*. In accordance with rule 1 names universally adopted will be retained, as: phenol, cresol, naphthol, etc.

This nomenclature may also be applied to heterocycles. Example: quinolinol.

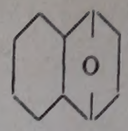
19. In naming polyhydric alcohols or phenols, one of the forms *di*, *tri*, *tetra*, etc., will be inserted between the name of the parent hydrocarbon and the suffix *ol*.

20. The name *mercaptan* as a suffix is abandoned; this function will be denoted by the suffix *thiol*.

21. Ethers are considered as hydrocarbons in which one or several hydrogen atoms are replaced by alkoxy groups. However, for symmetrical ethers the present nomenclature may be retained. Examples: $CH_3OC_2H_5$, methoxyethane; CH_3OCH_3, methoxymethane or methyl ether.

22. Oxygen linked, in a chain of carbon atoms, to two of these atoms will be denoted by the prefix *epoxy* in all cases where it would be unprofitable to name the substance as a cyclic compound. Examples: ethylene oxide = epoxyethane; epichlorohydrin = 3-chloro-1,2-epoxypropane; tetramethylene oxide = 1,4-epoxybutane.

An opportunity for its use will be found in bridged compounds; as 1,4-epoxynaphthalene:



23. Sulfides, disulfides, sulfoxides and sulfones will be named li the ethers, *oxy* being replaced by *thio*, *dithio*, *sulfinyl* and *sulfonyl*, respe tively. Examples: $CH_3SO_2C_2H_5$, methylsulfonylethane; CH_3SC_3H methylthiopropane; $CH_3CH_2CH_2SOCH_2CH_2CH_2CH_3$, 1-(propylsulfiny butane.

24. Aldehydes are characterized by the suffix *al* added to the name the hydrocarbon from which they are derived; thioaldehydes, by th suffix *thial*. Acetals will be named as 1,1-dialkoxyalkanes.

25. Ketones will receive the ending *one*. Diketones, triketone thioketones will be designated by the suffixes *dione*, *trione*, *thione*.

26. The name *ketene* is retained.

27. For acids the rule of the Geneva nomenclature is retaine However, in cases where the use of that nomenclature would not be con venient the carboxyl group will be considered as a substituting grou and the name of the acid will be formed by adding to the name of th hydrocarbon the suffix *carbonique* or *carboxylic*, according to the lan guage.

28. Acids in which an atom of sulfur replaces an atom of oxygen wi be named according to the Geneva nomenclature. Example: ethane thioic, -thiolic, -thionic, -thionothiolic. If the carboxyl is considered as substituent the compounds will be named *carbothioic* acids. The suffi *carbothiolic* will be used if it is certain that the oxygen of the OH group i replaced by sulfur; the suffix *carbothionic* if it is the oxygen of the CO group; the suffix *carbodithioic* will be used if both oxygen atoms ar replaced.

Examples of the two systems of names: CH_3COSH or CH_3CSOH (either one), ethanethioic acid, methanecarbothioic acid; CH_3COSH, ethanethiolic acid, methanecarbothiolic acid; CH_3CSOH, ethanethionic acid, methanecarbothionic acid; CH_3CSSH, ethanethionothiolic acid, methanecarbodithioic acid.

29. The existing conventions will be retained for salts and esters.

30. Acid anhydrides will retain their present mode of designation according to the names of the corresponding acids. For names formed in accordance with the Geneva nomenclature, the amides, amidoximes, amidines, imides and nitriles will be named like the acids by adding to the name of the corresponding hydrocarbon the endings *amide*, *amidine*, *amidoxime*, *imide* and *nitrile*, respectively, while the halides will be named by combining *chloride*, etc., with the name of the radical. Examples: C_3H_7COCl, butanoyl chloride; $C_3H_7CONH_2$, butanamide; etc.

If the carboxyl is considered as a substituent the endings *carbonamide*, *carbonamidine*, *carbonamidoxime*, *carbonimide*, *carbonitrile* will be used. Examples: C_3H_7COCl, propanecarbonyl chloride; $C_3H_7CONH_2$, propanecarbonamide; etc.

31. The ending *ine* is reserved exclusively for nitrogenous bases. The present nomenclature of monoamines is retained. For polyamines, the name of the hydrocarbon will be followed by the suffixes *diamine*, *triamine*, etc.

For aliphatic compounds containing quinquevalent nitrogen the ending *ine* will be changed to *onium*. For cyclic substances containing quinquevalent nitrogen in the ring the ending *ine* will be changed to *inium;* for those with the ending *ole*, this will be changed to *olium*. Examples: pyridine, pyridinium; imidazole, imidazolium.

In accordance with the first sentence of this rule the spelling of names of non-bases ending in *-ine* should be changed; thus glycerine becomes glycerol, dextrine becomes dextrin, propine becomes propyne.

32. The nomenclature of the derivatives of phosphorus, arsenic, antimony and bismuth, being very complicated, will be considered later.

Usage in this field needs systematizing but the Committee could not agree upon a plan. The scheme proposed by the American Committee for the acids of phosphorus, arsenic and antimony was as follows (with "phosph" and "stib" corresponding to "ars"):

Formula	*Prefix*	*Suffix*
$RR'AsOH$	Arsinoso	Arsinous
$RAs(OH)_2$	Arsonoso	Arsonous
$RR'AsO\cdot OH$	Arsino	Arsinic
$RAsO(OH)_2$	Arsono	Arsonic

33. Compounds derived from hydroxylamine by replacement of the hydrogen of the hydroxyl will be regarded as alkoxy derivatives; those in which an atom of hydrogen of the NH_2 group is replaced, as alkylhydroxylamines. Oximes will be named by adding the suffix *oxime* to the name of the corresponding aldehyde, ketone or quinone. Examples: $C_2H_5ONH_2$, ethoxyamine; C_2H_5NHOH, ethylhydroxylamine. Further examples: $CH_3CH_2CH{=}NOH$, propanal oxime; $CH_3C(=NOH)CH_3$, propanone oxime.

34. The generic term *urea* is retained; it will be used as a suffix for the yl and acyl derivatives of urea. Examples: butylurea, C_4H_9NH-NH_2; butyrylurea, $C_3H_7CONHCONH_2$. The bivalent radical —NH-NH— will be named *ureylene*.

35. The generic name *guanidine* is retained.

36. The name *carbylamine* is retained.

37. Isocyanic and isothiocyanic esters (RNCO, RNCS) will be named *isocyanates* and *isothiocyanates*. Examples: ethyl isocyanate, H_5NCO; ethyl isothiocyanate, C_2H_5NCS.

38. The name *cyanate* is reserved for true esters which on saponification yield cyanic acid or its hydration products. The name *sulfocyanate* will be replaced by *thiocyanate*. Examples: C_2H_5CNO, ethyl cyanate; H_5CNS, ethyl thiocyanate.

39. Nitro derivatives: no change in the present nomenclature. That is, the group NO_2 is always indicated by the prefix *nitro*, never by a suffix. Nitroso compounds are treated similarly (see rule 50). Examples: nitrosobenzene, 2,4,6- trinitrophenol.

40. Azo derivatives: the forms *azo*, *azoxy* are retained.

41. (a) Diazonium compounds, RN_2X, are named by addition of the suffix *diazonium* to the name of the parent substance (benzenediazonium chloride).

(b) Compounds having the same empirical formula but containing trivalent nitrogen will be named by replacing diazonium with *diazo* (benzenediazohydroxide).

(c) Substances of the type RN_2OM will be named *diazoates*.

(d) Compounds in which the two nitrogen atoms are united to a single carbon atom will be designated by the prefix *diazo* (diazomethane, diazoacetic acid).

(e) The term *diazoamino* is retained; however, these compounds may also be regarded as derivatives of triazene.

(f) Derivatives of the substances $H_2NNHNHNH_2$; NH=NN-HNH_2; NH=NNHN=NH will be named *tetrazanes*, *tetrazenes*, *pentazdienes*, etc.

42. Hydrazines are designated by the name of the alkyl radicals from which they are derived, followed by the suffix *hydrazine*. In cases where the amino group of carbonamides is replaced by the hydrazino group, the suffix *hydrazide* will be used. Hydrazo derivatives are regarded as derivatives of hydrazine. Examples: CH_3NHNH_2, methylhydrazine; $C_2H_5NHNHC_3H_7$, 1-ethyl-2-propylhydrazine; $C_3H_7CONHNH_2$, butyrohydrazide or propanecarbohydrazide.

43. Hydrazones and semicarbazones are named like the oximes. The term *osazone* is retained. Examples: CH_3CH=$NNHC_6H_5$, ethanal (or acetaldehyde) phenylhydrazone; $(CH_3)_2C$=$NNHCONH_2$, propanone (or acetone) semicarbazone.

44. The name *quinone* is retained. Examples: *p*-benzoquinone or *p*-quinone, 1,2-naphthoquinone or 1,2-naphthaquinone, phenanthrenequinone or phenanthraquinone.

45. Sulfonic and sulfinic acids will be designated by adding the suffixes *sulfonic* and *sulfinic* to the name of the hydrocarbon.

The analogous acids of selenium and tellurium will bear the names *alkaneselenonic* and *-seleninic* acids; *alkanetelluronic* and *-tellurinic* acids.

46. Organometallic compounds will be designated by the names of the organic radicals united to the metal which they contain, followed by the name of the metal. Examples: dimethylzinc, tetraethyllead, methylmagnesium chloride.

However, if the metal is united in a complex manner it may be considered as a substituent. Example: $ClHgC_6H_4CO_2H$, chloromercuribenzoic acid.

47. The nomenclature of cyclic derivatives having side chains will be considered later.

48. If it is necessary to avoid ambiguity, the names of complex radicals will be placed in parentheses. Example: (dimethylphenyl)-amine ⇔ $(CH_3)_2C_6H_3NH_2$; dimethylphenylamine ⇔ $C_6H_5N(CH_3)_2$.

V. Complex Functions

49. For compounds of complex function, that is to say, for compounds possessing different functions, only one kind of function (the principal function) will be expressed by the ending of the name. The other function will be designated by appropriate prefixes.

50. The following prefixes and suffixes will be used for designating the functions.

Function	*Prefix*	*Suffix*
Acid and derivatives	carboxy	carboxylic, carbonyl, carbonamide, etc., or oic, oyl, etc.
Alcohol	hydroxy	ol
Aldehyde	oxo, aldo (for aldehyde O) or formyl (for CHO)	al
Amine	amino	amine
Azo derivative	azo	....
Azoxy derivative	azoxy	....
Carbonitrile (nitrile)	cyano	carbonitrile or nitrile
Double bond	....	ene
Ether	alkoxy	....
Ethylene oxide, etc.	epoxy	....
Halide	halogeno [halo]	....
Hydrazine	hydrazino	hydrazine
Ketone	oxo or keto	one
Mercaptan	mercapto	thiol
Nitro derivative	nitro	....
Nitroso derivative	nitroso	....
Quinquevalent nitrogen	....	onium, inium [olium]
Sulfide	alkylthio	....
Sulfinic derivative	sulfino	sulfinic
Sulfone	sulfonyl	....
Sulfonic derivative	sulfo	sulfonic
Sulfoxide	sulfinyl	....
Triple bond	....	yne
Urea	ureido	urea

VI. Radicals

51. Univalent radicals derived from saturated aliphatic hydrocarbons by removal of one atom of hydrogen will be named by replacing the ending *ane* of the hydrocarbon by the ending *yl*.

52. The names of univalent radicals derived from unsaturated aliphatic hydrocarbons will have the endings *enyl*, *ynyl*, *dienyl*, etc., the positions of the double or triple bonds being indicated by numerals or letters where necessary.

53. Bivalent or trivalent radicals derived from saturated hydrocarbons by removal of 2 or 3 hydrogen atoms from the same carbon atom will be named by replacing the ending *ane* of the hydrocarbon by the endings *ylidene* or *ylidyne*. For radicals derived from unsaturated hydrocarbons, these endings will be added to the name of the hydrocarbon. The names isopropylidene and methylene are retained.

54. The names of bivalent radicals derived from aliphatic hydrocarbons by removal of a hydrogen atom from each of the two terminal carbon atoms of the chain will be ethylene, trimethylene, tetramethylene, etc.

55. Radicals derived from acids by removal of OH will be named by changing the ending carboxylic to *carbonyl* or, if the Geneva nomenclature is used, oic to *oyl*.

56. Univalent radicals derived from aromatic hydrocarbons by removal of a hydrogen atom from the ring will in principle be named by changing the ending *ene* to *yl*. However, the radicals C_6H_5 and $C_6H_5CH_2$ will continue provisionally to be named phenyl and benzyl, respectively. Moreover, certain abbreviations sanctioned by usage are authorized, as *naphthyl* instead of *naphthalyl*.

57. Univalent radicals derived from heterocyclic compounds by removal of hydrogen from the ring will be named by changing their endings to *yl*. In cases where this would give rise to ambiguity, merely the final *e* will be changed to *yl*. Examples: pyridine, pyridyl; indole, indolyl; pyrroline, pyrrolinyl; triazole, triazolyl; triazine, triazinyl.

58. Radicals formed by removal of a hydrogen atom from a side chain of a cyclic compound will be regarded as substituted aliphatic radicals.

Examples: $C_6H_5CH_2CH_2$—, (2-phenylethyl); C_6H_5CH=$CHCH_2$—, (3-phenyl-2-propenyl).

59. In general, special names will not be given to multivalent radicals derived from cyclic compounds by removal of several hydrogen atoms from the ring. In this case prefixes or suffixes will be used. Examples: triaminobenzene or benzenetriamine; dihydroxypyrrole or pyrrolediol.

60. The order in which prefixes or radicals are stated (alphabetic order or conventional order) remains optional.

VII. Numbering

61. In aliphatic compounds the carbon atoms of the fundamental chain will be numbered from one end to the other with the use of arabic numerals. In case of ambiguity the lowest numbers will be given (1) to the principal function, (2) to double bonds, (3) to triple bonds, (4) to atoms or radicals designated by prefixes. The expression "lowest numbers" signifies those that include the lowest individual number or

numbers. Thus 1,3,5 is lower than 2,4,6; 1,5,5 lower than 2,6,6; 1,2,5 lower than 1,4,5; 1,1,3,4 lower than 1,3,3,4.

Position of Numbers.—Where shall position numbers be placed, *before* or *after* the parts of the name to which they refer? Usage varies; some chemists place them after, some use a combination. The Committee has left full latitude on this point. The examples in the French version usually show the numbers placed after; the examples in these comments follow the practice of *Chemical Abstracts* in being placed before. Each method has certain advantages. In Beilstein numbers placed after are in parentheses, those placed before are not, *e.g.*, "2-methyl-butanol-(4)."

62. Positions in a side chain will be designated by numerals or letters, starting from the point of attachment. The numerals or letters will be in parentheses with the name of the chain. Examples: $(CH_3)_2CH$—, (1-methylethyl) or isopropyl; $CH_3CHClCH_2$—, (2-chloropropyl).

63. In case of ambiguity in the numbering of atoms or radic designated by prefixes, the order will be that chosen for the prefixes b fore the name of the fundamental compound or side chain of whi they are substituents. Example: $CH_2BrCH_2CH_2Cl$, 1-bromo-3-chlor propane (alphabetic order), or 1-chloro-3-bromopropane (order of i creasing radical weight). The purpose of the rule is to decide whi prefixes shall have which numbers, when the set of numbers (in t above example 1,3) for the prefixes has been determined.

64. The prefixes, *di*, *tri*, *tetra*, etc., will be used before simple expre sions (for example, diethylbutanetriol) and the prefixes *bis*, *tris*, *tetrak* etc., before complex expressions. Examples: bis(methylamino)pr pane, $CH_3NH(CH_2)_3NHCH_3$; bis(dimethylamino)ethane, $(CH_3)_2NCH$ $CH_2N(CH_3)_2$. The prefix *bi* will be used only to denote the doubling of radical or compound; for example biphenyl.

Prefix Names of Organic Radicals

acenaphthenyl (from acenaphthene) $C_{12}H_9$—

acetamido CH_3CONH—

acetenyl = ethynyl

acetimido $CH_3C(:NH)$—

acetonyl CH_3COCH_2—

acetonylidene CH_3COCH=

acetoxy CH_3COO—

acetyl CH_3CO—

acetylene =$CHCH$=

acridyl (from acridine) $C_{13}H_8N$—

acrylyl $CH_2:CHCO$—

adipyl —$OC(CH_2)_4CO$—

alanyl CH_3CHNH_2CO—

aldo (O replacing H_2 to form HCO—) O=

alkoxy RO—

alkyl. Denoting a non-cyclic saturated hydrocarbon of general formula, C_nH_{2n+1}—.

alkylthio (any alkyl radical attached by sulfur) RS—

allyl $CH_2:CHCH_2$—

β-allyl = isopropenyl

amido = amino

amidoxalyl = oxamyl

amino (amido) H_2N—

amoxy $CH_3(CH_2)_4O$—

amyl $CH_3(CH_2)_4$—

tert-amyl $CH_3CH_2C(CH_3)_2$—

amylidene $CH_3(CH_2)_3CH$=

anilino C_6H_5NH—

anisal = anisylidene

anisoyl p-$CH_3OC_6H_4CO$—

anisyl p-$CH_3OC_6H_4CH_2$—

anisylidene p-$CH_3OC_6H_4CH$=

anthranilo O—C_6H_4CON—

anthranoyl o-$H_2NC_6H_4CO$—

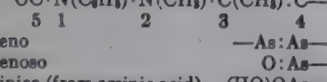
anthraquinonyl (from anthraquinone, 2 isomers) $C_{14}H_7O_2$—

anthryl (from anthracene, 3 isomers) $C_{14}H_9$—

anthrylene (from anthracene, 11 isomers) —$C_{14}H_8$—

antimono —Sb:Sb—

antipyryl (from antipyrine)



arseno —As:As—

arsenoso O:As—

arsinico (from arsinic acid) (HO)OAs=

arsino H_2As—

arso O_2As—

arsono (from arsonic acid) $(HO)_2OAs$—

arsylene HAs=

aryl. Radical derived by removal of one hydrogen atom from a hydrocarbon of benzene series.

asaryl 2, 4, 5-$(CH_3O)_3C_6H_2$—

aspargyl $H_2NCOCH_2CHNH_2CO$—

aspartyl —$COCH_2CHNH_2CO$—

auro Au—

azido = triazo

azino =NN=

azo —N:N—

azoxy —N(O)N—

bensal = benzylidene

benzamido C_6H_5CONH—

benzenyl = benzylidene

benzidino (from benzidine) $H_2NC_6H_4C_6H_4NH$—

benziloyl $(C_6H_5)_2C(OH)CO$—

benzimidazolyl (from benzimidazole) $C_7H_5N_2$—

benzimido $C_6H_5C(:NH)$—

benzofuryl (from benzofuran) C_8H_5O—

benzohydryl $(C_6H_5)_2CH$—

benzohydrylidene $(C_6H_5)_2C$=

benzopyranyl (2-α-, etc.) (from benzopyran) C_9H_7O—

benzoxazolyl (from benzoxazole) C_7H_4NO—

benzoxy C_6H_5COO—

benzoyl C_6H_5CO—

benzoylene —C_6H_4CO—

benzyl $C_6H_5CH_2$—

benzylidene C_6H_5CH=

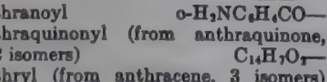
benzylidyne C_6H_5C≡

biphenylene —$C_6H_4C_6H_4$—

biphenylenedisazo —N:N$C_6H_4C_6H_4$N:N—

biphenylyl (2-, 3-, or 4-) (from biphenyl) $C_6H_5C_6H_4$—

bornyl (from borneol)



boryl O:B—

bromo Br—

1-butenyl $CH_3CH_2CH:CH$—

2-butenyl $CH_3CH:CHCH_2$—

3-butenyl $CH_2:CH(CH_3)_2$—

butoxy $CH_3(CH_2)_3O$—

butyl $CH_3(CH_2)_3$—

sec-butyl $CH_3CH_2CH(CH_3)$—

tert-butyl $(CH_3)_3C$—

butylene (1, 4) = tetramethylene

butylidene $CH_3(CH_2)_2CH$=

butyryl $CH_3(CH_2)_2CO$—

camphanyl (from camphene, 3 isomers) $C_{10}H_{17}$—

camphoroyl (from camphoric acid) $C_{10}H_{14}O_2$=

camphoryl (from camphor) $C_{10}H_{15}O$—

camphorylidene (from camphor) $C_{10}H_{14}O$=

caproyl $CH_3(CH_2)_4CO$—

capryl $CH_3(CH_2)_6CO$—

caprylyl $CH_3(CH_2)_6CO$—

carbamido = ureido

carbamyl H_2NCO—

carbanilino = phenylcarbamyl

carbazolyl (from carbazole, 5 isomers) $C_{12}H_8N$—

carbethoxy C_2H_5OOC—

carbomethoxy CH_3OOC—

carbonyl OC=

carbonyldioxy —COO—

carboxy HOOC—

carbyl —C—

carvacryl (4)$(CH_3)_2CH$, C_6H_2—(2), (1)CH_3

cetyl $CH_3(CH_2)_{14}CH_2$—

chloro Cl—

chloromercuri $ClHg$—

cinnamal = cinnamylidene

cinnamenyl = styryl

cinnamoyl $C_6H_5CH:CHCO$—

cinnamyl $C_6H_5CH:CHCH_2$—

cinnamylidene $C_6H_5CH:CHCH$=

cresotyl (from cresotic acid) (2, 3-shown) 2, 3-$HO(CH_3)C_6H_3CO$—

cresoxy = toloxy

cresyl = *ar*-hydroxytolyl; = tolyl

cresylene = tolylene

crotonyl $CH_3CH:CHCO$—

cumal = cumylidene

cumenyl $(CH_3)_2CHC_6H_4$—

cumidino $(CH_3)_2CHC_6H_4NH$—

cuminal = cumylidene

cumoyl (from cumic acid) p-$(CH_3)_2CHC_6H_4CO$—

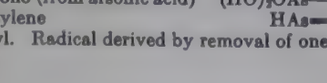
cumyl p-$(CH_3)_2CHC_6H_4CH_2$—

cumylidene p-$(CH_3)_2CHC_6H_4CH$=

cyano NC—

cyclobutyl (from cyclobutane) C_4H_7—

cyclohexadienyl (2, 4- shown)



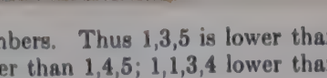
cyclohexadienylidene (2, 4- or 2, 5-; 2, 5-shown)

cyclohexenyl (from cyclohexene, 3 isomers) C_6H_9—

cyclohexenylidene (2- shown)

cyclohexyl (from cyclohexane) C_6H_{11}—

cyclohexylidene



cyclopentenyl (from cyclopentene) C_5H_7—

cyclopentyl (from cyclopentane) C_5H_9—

cyclopropyl (from cyclopropane) C_3H_5—

cymyl (from cymene) $C_{10}H_{13}$—

2-p-cymyl = carvacryl

3-p-cymyl = thymyl

desyl $C_6H_5COCH(C_6H_5)$—

diazo —N:N—

diazoamino —N:NNH—

dodecyl $CH_3(CH_2)_{10}CH_2$—

duryl 2, 3, 5, 6-$(CH_3)_4C_6H_2$—

durylene

epoxy (to different atoms already united in some other way) —O—

ethene = ethylene

ethenyl = ethylidyne = vinyl

ethinyl = ethynyl

ethoxalyl C_2H_5OOCCO—

ethoxy C_2H_5O—

ethyl CH_3CH_2—

ethylene —CH_2CH_2—

ethylenedioxy —$O(CH_2)_2O$—

ethylidene CH_3CH=

ethylidyne CH_3C≡

ethynyl CH:C—

ethynylene —C:C—

fenchanyl (from fenchane) $C_{10}H_{17}$—

fenchyl (= 2-fenchanyl) $C_{10}H_{17}$—

fluorenyl (from fluorene, 5 isomers) $C_{13}H_9$—

fluorenylidene $C_{13}H_8$=

fluoro F—

formanido HCONH—

formazyl $C_6H_5N:N$, C—, C_6H_5NHN

formyl OCH—

furfural = furfurylidene.

furfuryl O·CH:CH·CH:CCH$_2$—

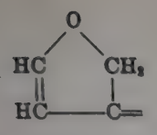
furfurylidene (2 isomers; 2-shown)

2-furoyl O·CH:CH·CH:CCH$_2$—

3-furoyl CH:CH·O·CH:CCO—

furyl (2 isomers, 2-shown)

furylidene 3(2)— (also a 2(3)-form)



anyl (from geraniol) $C_{10}H_{17}$—
itamyl —$OCCHNH_2(CH_3)_2CO$—
itaryl —$OC(CH_3)_2CO$—
rceryl —CH_2CHCH_3—
|
rcolyl $HOCH_2CO$—
ycyl H_2NCH_2CO—
yoxylyl $OCHCO$—
naiacyl = o-methoxyphenyl
anido $H_2NC(:NH)NH$—
anyl $H_2NC(:NH)$—

ndecyl $CH_3(CH_2)_{10}$—
ptyl $CH_3(CH_2)_6$—
exadecyl = cetyl
exyl $CH_3(CH_2)_5$—
ippuryl $C_6H_5CONHCH_2CO$—
omopiperonyl
3, 4-$(CH_2O_2)C_6H_3CH_2CH_2$—
ydrazi HN
|
(to same atom)
|
HN

ydrazino H_2NNH—
ydrazo (to different atoms) —HNNH—
ydrazono H_2NN=
ydroxamino HONH—
ydroximino = isonitroso
ydroxy (hydroxyl) HO—

imidazolyl (from imidazole, 4 isomers)
$C_3H_3N_2$—
imino (imido) NH=
indanyl (from indan, 4 isomers) C_9H_9—
indenyl (from indene, 7 isomers) C_9H_7—
indolyl (from indole, 7 isomers) C_8H_6N—
indolylidene NH
|
C_6H_4 CH_2
\ /
C
||
3(2)-, etc.

indyl = indolyl
iodo I—
iodoso OI—
iodoxy O_2I—
isoallyl = propenyl
isoamoxy $(CH_3)_2CHCH_2CH_2O$—
isoamyl $(CH_3)_2CHCH_2CH_2$—
isoamylidene $(CH_3)_2CHCH_2CH$=
isobutenyl = 2-methylpropenyl
isobutoxy $(CH_3)_2CHCH_2O$—
isobutyl $(CH_3)_2CHCH_2$—
isobutyryl $(CH_3)_2CHCO$—
isocyano C:N—
isohexyl $(CH_3)_2CH(CH_2)_2$—
isoindolyl (from isoindole, 4 isomers)
C_8H_6N—
isoleucyl
$CH_3CH_2CH(CH_3)CHNH_2CO$—
isonitro HOON=
isonitroso HON=
1-isopentenyl = 3-methyl-1-butenyl
isophthalal = isophthalylidene
isophthaloyl —OCC_6H_4CO— (m)
isophthalylidene =HCC_6H_4CH= (m)
isopropenyl $CH_2:C(CH_3)$—
isopropoxy $(CH_3)_2CHO$—
isopropyl $(CH_3)_2CH$—
isopropylidene $(CH_3)_2C$=
isoquinolyl (from isoquinoline, 9 isomers)
C_9H_6N—
isothiocyano S:C:N—
isovaleryl $(CH_3)_2CHCH_2CO$—
isoxazolyl (from isoxazole, 5 isomers)
C_3H_2NO—
keto = oxo

lauroyl (from lauric acid)
$CH_3(CH_2)_{10}CO$—
leucyl (from leucine)
$(CH_3)_2CHCH_2CHNH_2CO$—

malonyl —$OCCH_2CO$—
menthyl (from menthane 2-p-shown)
|
$CH_3 \cdot CH(CH_2)_2 \cdot CH(CH(CH_3)_2) \cdot\cdot$
1 4
|
CH_2CH-
3 2

mercapto HS—
mercuri —Hg—
a-mesityl 3, 5-$(CH_3)_2C_6H_2CH_2$—
2-mesityl 2, 4, 6-$(CH_3)_3C_6H_2$—
methene = methylene
methenyl = methylidyne
methionyl $CH_2(SO_2)_2$=
methoxy CH_3O—
methyl CH_3—
methylene CH_2=
methylenedioxy —OCH_2O—
methylidyne CH≡
methylol = (hydroxmethyl)
myristoyl (from myristic acid)
$CH_3(CH_2)_{12}CO$—

naphthal = naphthylmethylene
naphthalimido (from naphthalic acid)
$C_{10}H_6(CO)_2N$—
naphthenyl = naphthylmethylidyne.
naphthoxy $C_{10}H_7O$—
naphthoyl $C_{10}H_7CO$—
naphthyl (1- or 2-) $C_{10}H_7$—
naphthylene $C_{10}H_6$=
naphthylidene
C
||
C
H_2 1 (4)-, etc.
nitramino O_2NNH—
nitrilo N≡
nitro O_2N—
aci-nitro = isonitro
nitroso ON—

norcamphanyl (from norcamphane)
C_7H_{11}—

octyl $CH_3(CH_2)_7$—
oleoyl (from oleic acid) $C_{17}H_{33}CO$—
oxalyl —OCCO—
oxamido $H_2NCOCONH$—
oxamyl H_2NCOCO—
oximido = isonitroso
oxo (to same atom) O=
oxy (used as a connective; cf. epoxy and oxo) —O—

palmitoyl (from palmitic acid)
$CH_3(CH_2)_{14}CO$—
pentamethylene —$CH_2(CH_2)_3CH_2$—
|
pentazolyl N=N—N=N—N—
pentenyl (like butenyl) C_5H_9—
pentyl = amyl
perimidyl (from perimidine, 8 isomers)
$C_{11}H_7N_2$—
perseleno Se:Se=
perthio (replacing O only) S—S=
phenacyl $C_6H_5COCH_2$—
phenacylidene C_6H_5COCH=
phenanthryl (from phenanthrene, 5 isomers) $C_{14}H_9$—
phenanthrylene (several isomers)
—$C_{14}H_8$—
phenenyl (s-, as-, v-) C_6H_3≡
phenethyl $C_6H_5CH_2CH_2$—
phenetidino $C_2H_5OC_6H_4NH$—
phenetyl (o, m, or p) $C_2H_5OC_6H_4$—
phenoxy C_6H_5O—
phenyl C_6H_5—
phenylazo $C_6H_5N:N$—
phenylcarbamido = phenylureido
phenylene (o, m, or p) C_6H_4=
phenylenedisazo (o, m, p)
—N:NC_6H_4N:N—
phenylidene = cyclohexadienylidene
phenylureido $C_6H_5NHCONH$—
phosphareno —P:As—
phosphazo —P:N—
phosphinico (from phosphinic acid)
HOOP=
phosphino H_2P—
phospho O_2P—
phosphoarseno = phospharseno
phosphono $(HO)_2OP$—
phosphoro —P:P—

phosphoroso OP—
phthalal = phthalylidene
phthalidene (from phthalide)
|
$C_6H_4 \cdot CO \cdot O \cdot C$=
phthalidyl (from phthalide)
|
$C_6H_4 \cdot CO \cdot O \cdot CH$—
phthalimido (o) $C_6H_4(CO)_2N$—
phthaloyl (o) —OCC_6H_4CO—
phthalylidene (o) =HCC_6H_4CH=
picryl 2, 4, 6-$(NO_2)_3C_6H_2$—
piperidyl (from piperidine, 4 isomers)
$C_5H_{10}N$—
piperonyl 3, 4-$(CH_2O_2)C_6H_3CH_2$—
piperonylidene 3, 4-$(CH_2O_2)C_6H_3CH$=
pivalyl (from pivalic acid) $(CH_3)_3CCO$—
prolyl (from proline)
|
$NH \cdot CH_2 \cdot CH_2 \cdot CH_2 \cdot CH \cdot CO$—
propargyl = 2-propynyl
propenyl $CH_3CH:CH$—
propenylidene $CH_3CH:C$=
propiolyl HC:CCO—
propionyl CH_3CH_2CO—
propoxy $CH_3CH_2CH_2O$—
propyl $CH_3CH_2CH_2$—
propylene —$CH(CH_3)CH_2$—
propylidene CH_3CH_2CH=
1-propynyl $CH_3C:C$—
2-propynyl $CH:CCH_2$—
pseudoallyl = isopropenyl
as-pseudocumyl 2, 3, 5-$(CH_3)_3C_6H_2$—
s-pseudocumyl 2, 4, 5-idem
v-pseudocumyl 2, 3, 6-idem
pseudoindolyl (from pseudoindole, 7 isomers) C_8H_8N—
pyranyl (2-a; 2γ; 3a; etc.) C_5H_5O—
pyrazolyl (from pyrazole, 4 isomers)
$C_3H_3N_2$—
pyridyl (from pyridine, 3 isomers)
C_5H_4N—
pyridylidene 4 (1)-, etc. =C NH
pyrimidyl (from pyrimidine) $C_4H_3N_2$—
pyromucyl = 2-furoyl
pyrrolidyl (from pyrrolidine, 3 isomers)
C_4H_8N—
|
pyrroyl $CH:CH \cdot CH:CH \cdot N \cdot CO$—
pyrryl (from pyrrole, 3 isomers)
C_4H_4N—

quinolyl (quinoline, 7 isomers) C_9H_6N—
quinonyl (from quinone) $C_6H_3O_2$—
quinoxalyl (from quinoxaline) $C_8H_5N_2$—

salicyl = o-hydroxyphenyl; = o-hydroxybenzyl
salicylidene (o) HOC_6H_4CH=
salicyloyl (o) HOC_6H_4CO—
selenino (HO)OSe—
seleninyl OSe=
seleno Se=
selenocyano NCSe—
selenono HO_2Se—
selenonyl —SeO_2—
selenyl HSe—
semicarbazido $NH_2CONHNH$—
silicono (HO)OSi—
silicyl H_3S—
silicylene H_2Si=
stannyl H_3Sn—
stearoyl $CH_3(CH_2)_{16}CO$—
stibarseno —Sb:As—
stibinico HOOSb=
stibino H_2Sb—
stibo O_2Sb—
stibono $(HO)_2OSb$—
stiboso O:Sb—
stibyl = stibino
stibylene HSb=
styrene —$CH(C_6H_5)CH_2$—
styrolene = styrene
styryl $C_6H_5CH:CH$—
succinamyl $H_2NCOCH_2CH_2CO$—
succinimido $(CH_2CO)_2N$—
succinyl —$OCCH_2CH_2CO$—
sulfamino HO_2SNH—
sulfamyl H_2NO_2S—
sulfhydryl = mercapto
sulfino HO_2S—
sulfinyl OS=
sulfo HO_2S—
sulfonamido —SO_2NH—
sulfonyl —SO_2—
sulfuryl = sulfonyl

tauryl $H_2NCH_2CH_2SO_2$—
telluro Te=
terephthalal = terephthalylidene
terephthaloyl (p) —OCC_6H_4CO—
terephthalylidene (p) =HCC_6H_4CH=
tetramethylene —$CH_2CH_2CH_2CH_2$—
tetrazolyl (from tetrazole, 2 isomers)
CHN_4—

thenoyl (from thiophenecarboxylic acid, 2 isomers) C_4H_3SCO—
thenyl (2 isomers) $C_4H_3SCH_2$—
thenylidene (2 isomers) C_4H_3SCH=
thiazolyl (from thiazole, 3 isomers)
C_3H_2NS—
thienyl (from thiophene, 2 isomers)
C_4H_3S—
thio —S—
thiocarbonyl SC=
thiocyano NCS—
thiohydroxy = mercapto
thiol (S replacing O in OH whereas thiono is S replacing O in CO. Both are used in place of "thio" when required for distinction)
thiono (S replacing O in CO. See thiol)
thionyl = sulfinyl
thujyv (from sabinane, attached at 2-position) $C_{10}H_{17}$—
thymyl (from thymol)
|
$HC:C(CH_3) \cdot CH:CH\cdot\cdot$
|
$C(CH(CH_3)_2):C$—

toloxy (o, m, or p) $CH_3C_6H_4O$—
toluino (o, m, or p) $CH_3C_6H_4NH$—
toluyl (o, m, or p) $CH_3C_6H_4CO$—
a-toluyl $C_6H_5CH_2CO$—
tolyl (o, m, or p) $CH_3C_6H_4$—
a-tolyl = benzyl
tolylene (6 isomers) $CH_3C_6H_3$=
a-tolylene = benzylidene
tosyl —$SO_2C_6H_4CH_3$
triazeno $NH_2N:N$—
triazinyl (from triazine) $C_3H_2N_3$—
triazo N_3—
triazolyl (from triazole) $C_2H_2N_3$—
trimethylene —$CH_2CH_2CH_2$—
tryptophyl (from tryptophan)
$C_{11}H_{11}N_2O$—
tyrosyl (from tyrosine)
p-$HOC_6H_4CH_2CHNH_2CO$—

undecyl = hendecyl (in sense $C_{11}H_{23}$—)
uramino = ureido
ureido (used by some synonymously with ureylene) H_2NCONH—
ureylene —HNCONH—

valeryl $CH_3(CH_2)_3CO$—
valyl (from valine)
$(CH_3)_2CHCHNH_2CO$—
vanillal = vanillylidene
vanilloyl 3, 4-$(CH_3O)(HO)C_6H_3CO$—
vanillyl 3, 4-$(CH_3O)(HO)C_6H_3CH_2$—
vanillylidene
3, 4-$(CH_3O)(HO)C_6H_3CH$=
veratral = veratrylidene
veratroyl 3, 4-$(CH_3O)_2C_6H_3CO$—
veratryl 3, 4-$(CH_3O)_2C_6H_3CH_2$—
veratrylidene 3, 4-$(CH_3O)_2C_6H_3CH$=
vinyl $H_2C:CH$—

vinylene —CH:CH—
vinylidene $H_2C:C$=

xanthyl (from xanthine, 6 isomers)
$C_{12}H_9O$—
xenyl C_6H_5—C_6H_4—
xyloyl (from xylic acid, 7 isomers)
$(CH_3)_2C_6H_3CO$—
xylyl $(CH_3)_2C_6H_3$—
xylylene —$H_2CC_6H_4CH_2$—

* Abbreviations Used in this Dictionary *

a. acid
abs. absolute
abt. about
ac. a. acetic acid
acet. acetone
al. alcohol, ethyl
alk. alkali
amor. amorphous
anh. anhydrous
arom. aromatic
art. artificial
asym. or as. asymmetric

bi-py. bipyramidal
bl. blue
blk. black
boil. boiling
b.p. boiling point
br. brown
bz. benzene

c. cold
ca. about
carb. carbonates
caust. caustic
chl. chloroform
col. colorless
comp. compound
conc. concentrated
cr. or cryst. crystal

d. decomposes
d dextrorotatory (part of formula)
D. density
deliq. deliquescent
dil. dilute
dk. dark
dl racemic

efflor. efflorescent
et. ethyl or ethyl ether
et. ac. ethyl acetate
eth. ether
exp. explodes

f. from
feath. feathery
fl. flakes
fluores. fluorescent
f.p. freezing point
frz. freezes
fum: fûming

gel. gelatinous
gen. generally
glac. glacial
glit. glittering
glyc. glycerin

h. hot
hex. hexagonal
hyd. hydrate or hydrolyzes
hyg. hygroscopic

i. insoluble; inactive
ign. ignites
inflam. inflammable
infus. infuses
irid. iridescent

l levorotatory
leaf. or lf. leaflets
lg. large
lgr ligroin
liq. liquid
lng. long
lt. light
lust. lustrous
lvs. leaves

m. meta
me. methyl
met. metallic
micr. microscopic
min. mineral
mixt. mixture
mod. modification
monocl. monoclinic
m.p. melting point
m.w. molecular weight

need. or nd. needles

o. ortho
octahdr. octahedral
or. orange
ord. ordinary
org. organic
orth. orthorhombic

p. para
pa. pale
pet. petroleum
pet. eth. petroleum ether
ph. phenyl
pl. plates
pois. poison
powd. powder
pr. prisms
purp. purple
pyr. pyridine
pyram. pyramide

quad. quadrilateral
q.v. which see

rac. racemic
resin. resinous
rhbdr. rhombohedral
rhomb. rhombic

s. soluble
sc. scales
sec. secondary
sh. short
sl. slightly
slend. slender
sm. small
soft. softens
sol. solution
solv. solvents
soly. solubility
sp. gr. or s.p. specific gravity
st. steel
stab. stable
subl. sublimes
sym. symmetrical

tab. tablets
tert. tertiary
tetr. tetragonal
tol. toluene
trans. transparent
tricl. triclinic
trim. trimetric

uns. unsymmetrical
unst. unstable

v. very
var. variable
vic. vicinal
visc. viscous
volat. volatile or volatilizes
vlt. violet

w. water
wh. white

yel. yellow
ylsh. yellowish

> above
< below
∞ soluble in all proportions.

A

A number. Measure of fatty acids precipitated from edible fats.

abampere. Unit of electrical current, equal to .1 amp.

A.S.T.M. distillation. See Engler distillation.

A-stage resin. Thermosetting resin reacted only to the initial stage where it is soluble and fusible; normal stage of a resin for impregnation.

Abalyn (methyl abietate). $C_{19}H_{29}COOCH_3$; amber liquid; sp. gr. 1.04; b.p. 360-365.

abampere-turn. Unit of magnetic potential; equals 10 ampere-turns and 12.566 gilberts.

abaxial. Away from axis.

Abbe prism. Prism combinations used in prism binoculars and in Abbe refractometer.

abbreviations. *See separate section containing abbreviations.*

abcoulomb. Quantity of electricity carried past any point in a circuit in 1 second by a current of 1 abamp.; 10 absolute coulombs.

abelmoschus (ambrette). Tropical seeds used in perfumery and flavors.

aberrant. Deviating from a normal type.

aberration. Error or deviation from ideal.

aberration angle (aberration constant). Maximum angular displacement of a star because of earth's orbital motion. (20.5″).

aberration, chromatic. See chromatic aberration.

aberration, spherical. See spherical aberration.

abfarad. C.g.s. electromagnetic unit of capacitance requiring 1 abcoulomb to raise its potential one abvolt.

abhenry (centimeter of inductance). C.g.s. electromagnetic unit of inductance or mutual inductance equal to 10^{-9} henry.

abietate. See resinate.

abietic acid (abietinic acid; sylvic acid). $(CH_3)_2CH(CH_3)_2C_{14}H_{16}COOH$; m.w. 302.23; yel. amor. powder; m.p. 137-66, var.; i.w.; s.al.; used in mfr. of metal resinates.

abietic acid, dihydro methyl-. See Hercolyn.

abietic anhydride. See gum rosin.

abietinic acid. See abietic acid.

abiogenesis. Spontaneous generation; production of animate from inanimate matter.

abiotoxine. Substance that prolongs duration of antiseptic value.

abohm. C.g.s. electromagnetic unit of resistance equal to 10^{-9} absolute ohm.

Abopon. Complex water-soluble sodium borophosphate used in flameproofing.

Abopon Special. A borophosphate complex in powdered form which is completely soluble in water and forms a clear, transparent film upon drying its water solution; a flameproofing agent, particularly for cotton and heavy plush.

Abracol. Para toluene sulfanilide.

Abracol 203. Para toluene sulfanilide.

Abracol 234. Glyceryl di-cresyl ether.

Abracol 777. Glyceryl mono-cresyl ether diacetate.

Abracol 789. Toluene sulfonamide.

Abracol 888. Glyceryl di-cresyl ether acetate.

Abracol 1001. Tertiary butyl cresol.

abrasive. A product used for polishing or grinding; it may be natural, as tripoli, garnet, rouge, pumice, etc., or synthetic, as Carborundum, Aloxite, Metalite, Crystolon, etc. Abrasives are used in powder or block form, suspended in a liquid or paste, or on a grinding wheel.

abscissa. Distance of a point from ordinate axis, measured parallel to abscissac axis.

absolute humidity. See humidity, absolute.

absolute temperature. See temperature, absolute.

absolute units. System of units based on the smallest possible number of independent units.

absolute zero. The temperature at which the volume of a gas theoretically becomes zero at −273.13° C. or −459.4° F. since Charles' law states that the volume of a gas decreases $^1/_{273}$ for each degree fall of temperature.

absorption. The taking up of substance thru the interior of another, e.g. a gas absorbed in water; not to be confused with adsorption which is a surface phenomena.

absorption band. Characteristic dark-line resulting when light which is capable of giving a continuous spectrum passes thru an absorbing medium and is then analyzed by the spectroscope.

absorption coefficient. The volume of gas in cc. at 0° C and 760 mm. which dissolves in 1 cc. water. In optics fractional rate at which flux density of an emission decreases by absorption, in respect to thickness of medium traversed.

absorption discontinuity. Anomaly in absorption coefficient as a function of wave length referred to a spectral absorption line.

absorption edge. Sharp break in intensity of an x-ray absorption spectrum at a certain wave length or frequency.

absorption factor. Unity minus the attenuation factor; ratio of energy flux in a diffracted x-ray beam, in the powder method, referred to ratio without absorption by powder.

absorption index. Ratio $\mu\lambda/4\pi n$ for any medium thru which a radiation of wave length λ passes, having a refractive index n and absorption coefficient μ.

absorption spectrum. Spectrum of radiation coming thru a selectively absorbing medium.

absorptive power. See absorptivity.

absorptivity (absorptive power). The fraction of radiant energy falling upon a body which is absorbed or transformed into heat.

abvolt. C.g.s. electromotive unit of electromotive force equal to 10^{-8} absolute volt.

abwatt. Unit of power equal to 1 abamp. thru a potential difference of 1 abvolt; equal to 10^{-7} watt.

acacia gum. See gum arabic.

acanthite. See silver sulfide.

acceleration. The time rate of change of velocity in either speed or direction, measured by the change in unit time.

acceleration, complementary (coriolis acceleration). Twice the vector product of angular velocity of a body of reference and linear velocity of the particle with respect to it.

acceleration due to gravity. The acceleration of a body freely falling in a vacuum; 980.6 cm./sec.^{2} or 32.2 ft./sec.^{2}

accommodation, coefficient of. Ratio between two temperature differences. Average degree to which reflected or re-evaporated molecules accommodate their energy to that of the surface on which they impinge.

accroides, gum. See gum accroides.

accumulation coefficient. Ratio of rate at which adsorbed molecules accumulate on a surface to rate at which they impinge.

accumulation time. Time theoretically necessary for accumulation of a quantum of radiant energy before it is released.

accumulator. Vessel for storing energy.

-aceae. Suffix denoting plant family.

acenaphthene (naphthylene ethylene). $C_{10}H_6(CH_2)_2$; m.w. 154.08; wh. lng. need.; m.p. 95; b.p. 277.5; i.w.; s.al.

acetal (1, 1-diethoxyethane; acetaldehyde diethyl acetal; ethylidene diethyl ether). $CH_3CH(OC_2H_5)_2$; mw. 118.11; colorless volat. liq.; b.p. 102-4; s.w.; s.al.

acetal, amino-. See ethylamine, β, β-diethoxy-.

acetaldehyde (ethanal; acetic aldehyde; aldehyde). CH_3CHO; m.w. 44.03; col. fum. inflam. liq.; m.p. −123.5; b.p. 21; s.w.; s.al.

acetaldehyde-ammonia (1-aminoethanol; α-aminoethyl alcohol; aldehyde-ammonia). $CH_3CH(NH_2)OH$; m.w. 61.06.; col. rhomb.; m.p. 97; s.w.; s.al.

acetaldehyde, butylethyl-. See caproaldehyde, α-ethyl-.

acetaldehyde, cyanohydrin. See lactonitrile.

acetaldehyde, dichloro- (dichloroethanal; dichloroaldehyde). $CHCl_2CHO$; m.w. 112.93; col. liq.; b.p. 90.5.

acetaldehyde, diethyl acetal. See acetal.

acetaldehyde, dimethyl acetal. See ethane, 1, 1-dimethoxy-.

acetaldehyde, methyl-. See propionaldehyde.

acetaldehyde, oxime (ethanaloxime; acetaldoxime). $CH_3CH{:}NOH$; m.w. 59.05; wh. cr. or col. liq.; m.p. 47; b.p. 114-5; s.w.; s.al.

acetaldehyde, phenyl-. See α-tolualdehyde.

acetaldehyde, phenylhydrazone (N-ethylidene-N′-phenylhydrazine). $CH_3CH{:}NNHC_6H_5$; m.w. 134.09.; col. need.; m.p. 99; b.p. 133-6; i.w.; i.al.

acetaldehyde, semicarbazone (ethanal semicarbazone). $CH_3CH{:}NNHCONH_2$; m.w. 101.08; need. f.w. or al.; m.p. 162-3; s.w.; s.al.

acetaldehyde sodium bisulfite (aldehyde bisulfite). $CH_3CHOHSO_3Na$; wh. powd.; s.w., s.al.; used in organic synthesis and in mfr. of aldehyde sulfoxylate.

acetaldehyde, thio-, trimer. See s-trithiane, 2, 4, 6-trimethyl-.

acetaldehyde, tribromo-. See bromal.

acetaldehyde, trichloro-. See chloral.

acetaldehyde, trimethyl-. See pivalaldehyde.

acetaldehyde, α- or β-trithio-. See s-trithiane, 2, 4, 6-trimethyl-.

acetaldehyde, γ-trithio-. $(CH_3CHS)_3$; m.w. 180.27; m.p. 81; b.p. 100.

acetal, dichloro- (1, 1-dichloro-2, 2-diethoxyethane). $CHCl_2CH(OC_2H_5)_2$; m.w. 187.01; b.p. 184.

acetal, diethylamino-. See triethylamine, β, β-diethoxy-.

acetal, dimethyl-. See ethane, 1, 1-dimethoxy-.

acetal, dimethylamino-. See ethylamine, β, β-diethoxy-N, N-dimethyl-.

acetaldol. See aldol.

acetaldoxime. See acetaldehyde, oxime.

acetaldoxime, trimethyl-. See pivalaldehyde, oxime.

acetal, trichloro-. See ethane, 1, 1, 1-trichloro-2, 2-diethoxy-.

acetalylamine. See ethylamine, β, β-diethoxy-.

acetamide (ethanamide). CH_3CONH_2; m.w. 59.05.; col. hex., or rhbdr., deliq. need. f.chl.; m.p. 81; b.p. 222; s.w.; s.al.

acetamide, N-benzyl- (N-acetylbenzylamine; acetobenzylamide). $C_6H_5CH_2NHCOCH_3$; m.w. 149.09; leaf. f. et.; m.p. 61; b.p. >300; i.w.; s.al.

acetamide, N-bromo- (acetobromamide). $CH_3CONHBr$; m.w. 137.96; +1 H_2O, lg. pl.; m.p. +H_2O, 70-80; anh., 108.; s.w.; s.al.

acetamide, α-chloro- (2-chloroethanamide). $ClCH_2CONH_2$; m.w. 93.50; monocl. need. m.p. 119.5; b.p. 225.6; s.w.; s.al.

acetamide, cyanonitro-. See fulminuric acid.

acetamide, α, α-dichloro- (2, 2-dichloroethanamide). $CHCl_2CONH_2$; m.w. 127.95; monocl. pr.; m.p. 98; b.p. 234.6; s.w.; s.al.

acetamide, N, N-diphenyl- (N-acetyldiphenylamine; N-phenylacetanilide). $(C_6H_5)_2NCOCH_3$; m.w. 211.11; lng. need. or rhomb. f.w.; m.p. 103; b.p. subl.; s.w.; s.al.

acetamide, N-ethyl- (acetoethylamide). $CH_3CONHC_2H_5$; m.w. 87.08; liq.; b.p. 205; s.w.; s.al.

acetamide, hydroxy-. See glycolamide.

acetamide, N-(2-hydroxy-1-naphthyl)-. See 2-naphthol, 1-acetamido-.

acetamide, N-(4-hydroxy-1-naphthyl)-. See 1-naphthol, 4-acetamido-.

acetamide, isopropyl-. See isovaleramide.

acetamide, N-methyl-N-1-naphthyl-. See 1-naphthylamine, N-acetyl-N-methyl-.

acetamide, N-naphthyl-. See naphthylamine, N-acetyl-.

acetamide, N-phenyl-. See acetanilide.

acetamide, N-2-thienyl- (N-acetyl-2-thiophenine; 2-acetothiophenide). $CH_3CONHC_4H_3S$; m.w. 141.12; wh. pl.; m.p. 160-1; s.w.; s.al.

acetamide, thio- (ethanethionamide, acetothioamide). CH_3CSNH_2; m.w. 75.11; yel. monocl. tab. f.w.; m.p. 108.5.; s.w.; s.al.

acetamide, N-(thiocarbamyl)-. See urea, acetylthio-.

acetamide, trichloro- (2, 2, 2-trichloroethanamide). CCl_3CONH_2; m.w. 162.39; monocl. tab. f.w.; m.p. 141; b.p. 239-40; s.w.; s.al.

acetamidine (ethanamidine). $CH_3C(:NH)NH_2$; m.w. 58.06; unstable; m.p. 166-7 d.; s.w.; s.al.

acetamidine, N, N′-diphenyl- (ethenyldiphenylamidine). $CH_3C(:NC_6H_5)NH$-

C_6H_5; m.w. 210.13; need. f.al.; m.p. 131-2; s.w.; s.al.

acetanilide (N-phenylacetamide; antifebrin). $CH_3CONHC_6H_5$; m.w. 135.08; rhomb., wh. leaf. f.w.; m.p. 114; b.p. 305; s.w., s.al.

acetanilide, α-acetyl-. See acetoacetanilide.

acetanilide, m-amino- (N-acetyl-m-phenylenediamine). $NH_2C_6H_4NHCOCH_3$; m.w. 150.09; cr. mass.; m.p. 70; s.w.; s.al.

acetanilide, o-amino- (N-acetyl-o-phenylenediamine). $CH_3CONHC_6H_4NH_2$; m.w. 150.09; sm. lust. pl.; m.p. 132; s.w.; i.al.

acetanilide, p-amino- (N-acetyl-p-phenylenediamine). $CH_3CONHC_6H_4NH_2$; m.w. 150.09; col. need. f.w.; m.p. 161-2; b.p. 267; s.w.; s.al.

acetanilide, m-bromo-. $CH_3CONHC_6H_4Br$; m.w. 213.99; need. f.dil.al.; m.p. 87.5; i.w.; s.al.

acetanilide, o-bromo- (N-acetyl-o-bromoaniline). $BrC_6H_4NHCOCH_3$; m.w. 213.99; need. f.al.; m.p. 99; i.w.; s.al.

acetanilide, p-bromo- (N-acetyl-p-bromoaniline; antisepsin; asepsin; bromoanilid). $BrC_6H_4NHCOCH_3$; m.w. 213.99; need. or monocl. pr.; m.p. 168; s.w.; s.al.

acetanilide, m-chloro- (N-acetyl-m-chloroaniline). $CH_3CONHC_6H_4Cl$; m.w. 169.53; need. f.dil. ac.a.; m.p. 72.5; s.w.; s.al.

acetanilide, o-chloro- (N-acetyl-o-chloroaniline). $CH_3CONHC_6H_4Cl$; m.w. 169.53; need. f.dil. ac.a.; m.p. 88; s.w.; s.al.

acetanilide, p-chloro- (N-acetyl-p-chloroaniline). $CH_3CONHC_6H_4Cl$; m.w. 169.53; rhomb. need. or pl.; m.p. 178.4; s.w.; s.al.

acetanilide, 2, 4-dimethyl-. See 2, 4-acetoxylide.

acetanilide, 2, 4-dinitro-. $CH_3CONHC_6H_3(NO_2)_2$; m.w. 225.08; need. f.al.; m.p. 120; i.w.; s.al.

acetanilide, o- or p-ethoxy-. See o- or p-acetophenetide.

acetanilide, m-hydroxy- (m-acetamidophenol). $CH_3CONHC_6H_4OH$; m.w. 151.08; col. need. f.w.; m.p. 149; s.w.; s.al.

acetanilide, o-hydroxy- (o-acetamidophenol). $CH_3CONHC_6H_4OH$; m.w. 151.08; col. need. f.w.; m.p. 149; s.w.; s.al.

acetanilide, p-hydroxy- (p-acetamidophenol). $CH_3CONHC_6H_4OH$; m.w. 151.08; col. monocl. f.al.; m.p. 168; s.w.; s.al.

acetanilide, o-hydroxy-N-methyl- (o-[acetylmethylamino] phenol). $CH_3CON(CH_3)C_6H_4OH$; m.w. 165.09; need.; m.p. 150; s.w.; s.al.

acetanilide, p-hydroxy-N-methyl-. $CH_3CON(CH_3)C_6H_4OH$; 165.09; cr.; m.p. 240; s.w.; s.al.

acetanilide, p-iodo-. $CH_3CONHC_6H_4I$; m.w. 260.99; monocl.; m.p. 183-4; s.w.; s.al.

acetanilide, p-methoxy-. See p-acetaniside.

acetanilide, N-methyl- (exalgin). $CH_3CON(CH_3)C_6H_5$; m.w. 149.09; col. rhomb. pr. f.al.; m.p. 101-4; b.p. 254.7; i.w.; s.al.

acetanilide, o-methyl-. See o-acetotoluide.

acetanilide, N-methyl-p-nitro-. $CH_3CON(CH_3)C_6H_4NO_2$; m.w. 194.09; leaf. f.w.; m.p. 152-3; i.w.; s.al.

acetanilide, p-methyloxy-. See p-acetaniside.

acetanilide, m-nitro-. $CH_3CONHC_6H_4NO_2$; m.w. 180.08; col.-yel. leaf.; m.p. 155; s.w.; s.al.

acetanilide, o-nitro-. $CH_3CONHC_6H_4NO_2$; m.w. 180.08; yel. monocl. leaf.; m.p. 93; s.w.; s.al.

acetanilide, p-nitro-. $CH_3CONHC_6H_4NO_2$; m.w. 180.08; yel. rhomb. pr.; m.p. 213-4; s.w.; s.al.

acetanilide, α-phenyl-. See α-toluanilide.

acetanilide, N-phenyl-. See acetamide, N, N-diphenyl-.

acetanilide, p-phenylazo-. See azobenzene, p-acetamido-.

acetanilide, thio-. $CH_3CSNHC_6H_5$; m.w. 151.14; need. f.w.; m.p. 75; i.w.; i.al.

o-acetaniside (N-acetyl-o-anisidine; o-acetanisidide). $CH_3OC_6H_4NHCOCH_3$; m.w. 165.09; wh.cr. f.w.; m.p. 87-8; b.p. 305; s.w.; s.al.

p-acetaniside (p-methyloxyacetanilide; p-acetamidoanisole; N-acetyl-p-anisidine; methacetin; p-acetanisidide). $CH_3CONHC_6H_4OCH_3$; m.w. 165.09; wh. powd. or pl. f.w.; m.p. 127; s.w.; s.al.

o-acetanisidide. See o-acetaniside.

acetate. Compound containing the acetate group, $CH_3COO—$; e.g. cellulose acetate; sodium acetate, CH_3COONa; ethyl acetate, $CH_3COOC_2H_5$.

acetate green. Chrome green made with lead acetate, a pigment having a yellowish-blue tone.

acetate of lime. See calcium acetate.

acetate rayon. See rayon, acetate.

acetdiamylamide. See diamylamide, acet-.

acetic acid (ethanoic acid). CH_3COOH; m.w. 60.03; col. liq.; m.p. 16.6; b.p. 118.1; s.w.; s.al.

acetic acid, acetamido-. See aceturic acid.

acetic acid, p-acetamidoanilino-. See glycine, N-p-acetamidophenyl-.

acetic acid, allyl-. See 4-pentenoic acid.

acetic acid, allyl ester (allylacetate, 2-propenyl ethanoate). $CH_3COOCH_2CH:CH_2$; m.w. 100.06; col. liq.; b.p. 103-4; s.w.; s.al.

acetic acid, amino-. See glycine.

acetic acid, amyl ester (amyl acetate; 1-pentanol acetate; amyl acetic ester). $CH_3COO(CH_2)_4CH_3$; m.w. 130.11; col. liq.; b.p. 148; s.w.; s.al.

acetic acid, amyl methyl-. See propionic acid, amyl ester.

acetic acid, anthranilido-. See anthranilic acid, N-(carboxymethyl)-.

acetic acid, benzamido-. See hippuric acid.

acetic acid, benzoyl- (β-ketohydrocinnamic acid; 3-oxo-3-phenylpropanoic acid). $C_6H_5COCH_2COOH$; m.w. 164.06; col. need. f.bz.; s.w.; s.al.

acetic acid, benzoyl-, ethyl ester (ethyl-β-ketohydrocinnamate; benzoylacetic ester). $C_6H_5COCH_2COOC_2H_5$; m.w. 192.09; col. liq.; m.p. <0; s.w.; s.al.

acetic acid, benzoyl-, methyl ester. $C_6H_5COCH_2COOCH_3$; m.w. 178.08; col.-yel. liq.; i.w.; s.al.

acetic acid, benzyl ester (benzyl acetate; benzylethanoate). $CH_3COOCH_2C_6H_5$; m.w. 150.08; col. liq.; m.p. −51.5; b.p. 213.5^{746}; s.w.; s.al.

acetic acid, bromo- (bromoethanoic acid). $CH_2BrCOOH$; m.w. 138.94. col. hex. or rhomb.; m.p. 50; b.p. 208; s.w.; s.al.

acetic acid, bromo-, ethyl ester (ethyl bromoethanoate). $CH_2BrCOOC_2H_5$; m.w. 166.97; col. liq.; sp.gr. 1.507 at 25/4; i.w.; s.al.; used in mfr. of tear gases.

acetic acid, sec-butyl-. See valeric acid, β-methyl-.

acetic acid butyl ester (butyl acetate; butyl ethanoate). $CH_3COO(CH_2)_3CH_3$; m.p. −76.8; b.p. 126.5; s.w.; s.al.

acetic acid, sec-butyl ester (2-butanol acetate; α-methylpropyl ethanoate). $CH_3COOCH(CH_3)C_2H_5$; m.w. 116.09.; col. liq.; b.p. 112-3; i.w.; s.al.

acetic acid, butylethyl-. See caproic acid, α-ethyl-.

acetic acid, butyl-2-ethyl-. See 1-butanol, 2-ethyl, acetate.

acetic acid, capryl ester (capryl acetate). $C_8H_{17}C_2H_3O_2$; m.w. 172.2; colorl. liq.; sp.gr. 0.885; b.p. 210; s.al.; used in mfr. of perfumes, cosmetics.

acetic acid, cetyl ester (cetyl acetate; hexadecyl ethanoate; n-hexadecyl acetate). $CH_3COO(CH_2)_{15}CH_3$; m.w. 284.28; need.; m.p. 18.5; b.p. 200.5^{15}; i.w.; s.al.

acetic acid, chloro- (chloroethanoic acid). $CH_2ClCOOH$; m.w. 94.48; col. rhomb.; m.p. α63, β55-6, γ50; b.p. 189; s.w.; s.al.

acetic acid, chloro-, butyl ester (butyl 2-chloroethanoate). $CH_2ClCOOC_4H_9$; m.w. 150.54; liq.; b.p. 175.

acetic acid, chloro-, ethyl ester (ethyl chloroacetate; ethyl chloroethanoate). $CH_2ClCOOC_2H_5$; m.w. 122.51; col. liq.; m.p. −26.0; b.p. 144.2; i.w.; s.al.

acetic acid, chloro-, methyl ester (methyl chloroethanoate). $CH_2ClCOOCH_3$; m.w. 108.50; m.p. −32.7; b.p. 131.5; s.w.; s.al.

acetic acid, chloro-, p-phenylphenacyl ester. $CH_2ClCOOCH_2COC_6H_4C_6H_5$; m.w. 288.56; m.p. 116.

acetic acid, chloro-, piperazinium salt. $C_4H_{10}N_2 \cdot 2CH_2ClCOOH$; m.w. 275.05; wh.cr.; m.p. 145-6; s.w.; s.al.

acetic acid, cyano- (cyanoethanoic acid; malonic mononitrile). $CNCH_2COOH$; m.w. 85.03; deliq. col. cr.; m.p. 66; b.p. 108^{15}, d. 160; s.w. s.al.

acetic acid, cyano-, ethyl ester. $CH_2(CN)COOC_2H_5$; n.w. 113.06; col. liq.; m.p. −22.5; b.p. 206; i.w.; s.al.

acetic acid, cyano-, methyl ester (methyl cyanoethanoate). $CNCH_2COOCH_3$; m.w. 99.05; col. liq.; m.p. −22.5; b.p. 200; i.w.; s.al.

acetic acid, diazo-, ethyl ester (ethyl diazoethanoate). $N_2CHCOOC_2H_5$; m.w. 114.06; yel. oil.; m.p. −22; b.p. 141; s.w.; s.al.

acetic acid, dibromo- (dibromoethanoic acid). $CHBr_2COOH$; m.w. 217.85; col. deliq. cr.; m.p. 48; b.p. 232; s.w.; s.al.

acetic acid, dibromo-, ethyl ester (ethyl dibromoethanoate). $CHBr_2COOC_2H_5$; m.w. 245.88; oil; i.w.; s.al.

acetic acid, dichloro- (dichloroethanoic acid). $CHCl_2COOH$; m.w. 128.93; col. liq.; m.p. 5-6; b.p. 194; s.w.; s.al.

acetic acid, dichloro-, ethyl ester (ethyl dichloroethanoate). $CHCl_2COOH$; m.w. 156.96; col. liq.; b.p. 158.2; s.w.; s.al.

acetic acid, diethyl-. See butyric acid, α-ethyl-.

acetic acid, diethylmethyl-. See butyric acid, α-ethyl-α-methyl-.

acetic acid, diiodo- (diiodoethanoic acid). CHI_2COOH; m.w. 311.86.; yel. cr.; m.p. 110; s.w.; s.al.

acetic acid, dimethyl-. See isobutyric acid.

acetic acid, di-n-octyl-. See capric acid, α-octyl-.

acetic acid, diphenyl- (diphenylmethane-α-carboxylic acid). $(C_6H_5)_2CHCOOH$; m.w. 212.09; col. need. f.w. or lf. f.al.; m.p. 148; b.p. subl.; s.w.; s.al.

acetic acid, ethoxy- (ethoxyethanoic acid; ethyloglycolic acid; glycolic acid ethyl ether). $C_2H_5OCH_2COOH$; m.w. 104.06; col. liq.; b.p. 206; s.w.; s.al.

acetic acid, ethyl-. See butyric acid.

acetic acid, ethyl ester (ethyl ethanoate; acetic ester). $CH_3COOC_2H_5$; m.w. 88.06; col. inflam. liq.; m.p. −83.6; b.p. 77.15; s.w.; s.al.

acetic acid, (ethylamino)-. See glycine, N-ethyl-.

acetic acid, ethyldimethyl-. See butyric acid, α, α-dimethyl-.

acetic acid, ethylene-. See cyclopropanecarboxylic acid.

acetic acid, ethylene ester. See glycol, diacetate.

acetic acid, ethylmethyl-. See butyric acid, α-methyl-.

acetic acid, ethylpropyl-. See valeric acid, α-ethyl-.

acetic acid, 2-fural-. See 2-furanacrylic acid.

acetic acid, furfuryl ester. See furfuryl alcohol, acetate.

acetic acid, guanido-. See glycocyamine.

acetic acid, heptyl ester (n-heptyl acetate). $CH_3COOC_7H_{15}$; m.w. 158.14; col. liq.; b.p. 191.5.; i.w.; s.al.

acetic acid, hexyl ester (n-hexyl acetate). $CH_3COO(CH_2)_5CH_3$; m.w. 144.12; col. liq.; b.p. 169.2; i.w.; s.al.

acetic acid, hydroxy-. See glycolic acid.

acetic acid, imino-. See acetic acid, iminodi-.

acetic acid, iminodi- (diglycolamidic acid; iminoacetic acid [incorrect]) $NH(CH_2COOH)_2$; m.w. 133.06; col. rhomb.; m.p. *ca.* 225; s.w.; i.al.

acetic acid, iodo- (iodoethanoic acid) CH_2ICOOH; m.w. 185.94; col. rhomb pl.; m.p. 82; s.w. s.al.

acetic acid, isoamyl-. See caproic acid, δ-methyl-.

acetic acid, isoamyl ester (isoamyl acetate; 3-methyl-1-butanol acetate; γ-methylbutyl ethanoate). $CH_3COO(CH_2)_2CH(CH_3)_2$; m.w. 130.11; col. liq.; m.p. −78.5; b.p. 142.5; s.w.; s.al.

acetic acid, isobutyl-. See isocaproic acid.

acetic acid, isobutyl ester (isobutyl acetate; β-methylpropyl ethanoate). $CH_3COOCH_2CH(CH_3)_2$; m.w. 116.09; col. liq.; m.p. −98.9; b.p. 116.5; s.w.; s.al.

acetic acid, isopropyl-. See isovaleric acid.

acetic acid, isopropyl ester (isopropyl acetate). $CH_3COOCH(CH_3)_2$; m.w. 102.08; col. liq.; m.p. −73.4; b.p. 89; s.w.; s.al.

acetic acid, isopropylmethyl-. See butyric acid, α, β-dimethyl-.

acetic acid, isothiocyano- (mustard oil acetic acid). $SCNCH_2COOH$; m.w. 117.09; rhomb. pl.; m.p. 125-6; b.p. subl.; s.w.

acetic acid, mercapto- (2-mercaptoethanoic acid; thioglycolic acid). $HSCH_2COOH$; m.w. 92.09; liq.; m.p. −16.5; b.p. $104\text{-}6^{11}$; s.w.; s.al.

acetic acid, methoxy- (methoxyethanoic acid, methyloglycolic acid). CH_3OCH_2COOH; m.w. 90.05; col. hyg. liq.; b.p. $89\text{-}91^{7}$; s.w.; s.al.

acetic acid, methyl-. See propionic acid.

acetic acid, methylene diester (methylene acetate; methylenediacetate; methanedioldiacetate). $(CH_3COO)_2CH_2$; m.w. 132.06; col. liq.; b.p. 170; s.w.; s.al.

acetic acid, methyl ester (methyl acetate). CH_3COOCH_3; m.w. 74.05; col. liq.; m.p. −98.1; b.p. 57.1; s.w.; s.al.

acetic acid, α-methylguanido-. See creatine.

acetic acid, methylpropyl-. See valeric acid, α-methyl-.

acetic acid, oxydi-. See diglycolic acid.

acetic acid, phenoxy- (glycolic acid phenyl ether). $C_6H_5OCH_2COOH$; m.w. 152.06; col. pl. or need. f.w.; m.p. 99; b.p. 285; s.w.; s.al.

acetic acid, phenyl-. See α-toluic acid.

acetic acid, β-phenylhydrazide. See hydrazine, 1-acetyl-2phenyl-.

acetic acid, piperazinium salt. $C_4H_{10}N_2 \cdot 2C_2H_4O_2$; m.w. 206.16; wh.cr.; m.p. 208.5-209; s.w.; s.al.

acetic acid, piperidide. See piperidine, 1-acetyl-.

acetic acid, propyl ester (n-propyl acetate). $CH_3COOC_3H_7$; m.w. 102.08; col. liq.; m.p. −92.5; b.p. 101.6; s.w.; s.al.

acetic acid, pyromucyl-, ethyl ester (ethyl 2-furoylacetate; ethyl β-keto-2-furanpropionate). $C_4H_3OCOCH_2COOC_2H_5$; m.w. 182.08; liq.; b.p. $142\text{-}3^{10}$; i.w.; s.al.

acetic acid, salicyl-. See benzoic acid, o-(carboxymethoxy)-.

acetic acid, silico-. See methane siliconic acid.

acetic acid, sulfo- (sulfoethanoic acid). HO_3SCH_2COOH; m.w. 140.09; hyg. tab. f.w.; m.p. 86; s.w.; s.al.

acetic acid, 2-thienyl-. See 2-thiophene acetic acid.

acetic acid, thiol- (ethanethiolic acid; methanecarbothiolic acid; thioacetic acid). CH_3COSH; m.w. 76.09; col. liq.; m.p. < −17; b.p. 93; s.w.; s.al.

acetic acid, thiol-, ethyl ester. CH_3-

$COSC_2H_5$; m.w. 104.12; liq.; b.p. 115-16; i.w.; s.al.

etic acid, tolyl-. See α-toluic acid, methyl-.

etic acid, tribromo- (tribromoethanoic acid). CBr_3COOH; m.w. 296.76; col. monocl. tab.; m.p. 135; s.w.; s.al.

etic acid, trichloro-. CCl_3COOH; m.w. 163.38; col. rhomb. deliq.; m.p. 57.5; b.p. 197.5; s.w.; s.al.

etic acid, trichloro-, ethyl ester. $CCl_3COOC_2H_5$; m.w. 191.41; col. liq.; b.p. 168; i.w.; s.al.

cetic acid, trichloro-, methyl ester. CCl_3COOCH_3; m.w. 177.39; col. liq.; m.p. −17.5; b.p. 153.8; decomposes in w. and al.

cetic acid, trichloro-, piperazinium salt. $C_4H_{10}N_2 \cdot 2CCl_3COOH$; m.w. 412.85; wh.cr.; m.p. 121-1.5; s.w.; s.al.

cetic acid, triiodo- (triiodo ethanoic acid). CI_3COOH; m.w. 437.77; yel. leaf.; m.p. 150; s.w.; s.al.

cetic acid, trimethyl-. See pivalic acid.

cetic acid, triphenyl-. $(C_6H_5)_3CCOOH$; m.w. 288.12; monocl. pr.; m.p. 265; s.w.; s.al.

cetic acid, ureido-. See hydantoic acid.

cetic acid, vinyl-. See 3-butenoic acid.

cetic aldehyde. See acetaldehyde.

cetic anhydride (ethanoic anhydride). $(CH_3CO)_2O$; m.w. 102.05; col. liq.; m.p. −73.1; b.p. 140.0; s.al.

cetic ester. See acetic acid, ethyl ester.

cetic ether. See acetic acid, ethyl ester.

cetin. See glycerol, diacetate, monoacetate, triacetate.

cetoacetanilide (β-ketobutyranilide; α-acetylacetanilide). $CH_3COCH_2CONHC_6H_5$; m.w. 177.09; leaf.; m.p. 85; s.w.; s.al.

cetoacetanilide, α-bromo- (2-bromo-3-oxo-N-phenylbutanamide). $CH_3COCHBrCONHC_6H_5$; m.w. 256.00; col. need.; i.w.; s.al.

cetoacetanilide, o-chloro. $CH_3COCH_2CONHC_6H_4Cl$. m.w. 211.5; m.p. 103-106; i.w.

cetoacetic acid, γ-chloro-, ethyl ester (ethyl-4-chloro-3-oxobutanoate). $CH_2ClCOCH_2COOC_2H_5$; m.w. 164.53; col. liq.; b.p. 200; s.w.; s.al.

cetoacetic acid, α, α-diethyl-, ethyl ester (ethyl -2, 2-diethyl-3-oxobutanoate). $CH_3COC(C_2H_5)COOC_2H_5$; m.w. 186.14; wh.-yel. liq.; i.w.; s.al.

cetoacetic acid, ethyl ester (ethyl acetoacetate; acetoacetic ester; ethyl 3-oxobutanoate). $CH_3COCH_2COOC_2H_5$; m.w. 130.08; col. liq.; m.p. < −80; b.p. 180; s.w.; s.al.

cetoacetic acid, α, α'-ethylidenebis-, diethyl ester. See glutaric acid, α, γ-diacetyl-β-methyl-, diethyl ester.

cetoacetic acid, α-isopropyl-, ethyl ester (ethyl 2-isopropyl-3-oxobutanoate). $CH_3COCH(C_3H_7)COOC_2H_5$; m.w. 172.12; col. liq.; s.w.; s.al.

cetoacetic acid, methyl ester (methyl acetoacetate). $CH_3COCH_2COOCH_3$; m.w. 116.06; sp.gr. 1.0780; col. liq.; b.p. 170; s.w.; s.al.

cetoacetic acid, α-methyl-, ethyl ester (ethyl 2-methyl-3-oxobutanoate; methylacetoacetic ester). $CH_3COCH(CH_3)COOC_2H_5$; m.w. 144.09; col. liq.; b.p. 186.8; s.w.; s.al.

cetoacetic ester. See acetoacetic acid, ethyl ester.

cetoacetic ester synthesis. Reaction in which acetoacetic ester (ethyl-acetoacetate) is used for the preparation of other compounds, chiefly ketones and acids.

cetoacetic ether. See acetoacetic acid, ethyl ester.

cetobacter. Active organism which oxidizes alcohol to acetic acid (vinegar).

cetobenzylamide. See acetamide, N-benzyl-.

cetobromamide. See acetamide, N-bromo-.

cetocinnamone. See acetone, benzal-.

cetoethylamide. See acetamide, N-ethyl-.

acetoethyl nitrate. $C_2H_4O \cdot (C_2H_5NO_3)_2$?; m.w. 226.13; liq.; i.w.; s.al.

acetoglyceral (glycerol ethylidene ether). $C_3H_5(OH)O_2C_2H_4$; m.w. 118.08; liq.; b.p. 184-8; s.w.; s.al.

acetoin (3-hydroxy-2-butanone; acetylmethylcarbinol). $CH_3CHOHCOCH_3$; m.w. 88.06; liq.; m.p. 15; b.p. 142; s.w.; s.al.

acetol (1-hydroxy-2-propanone; hydroxyacetone; acetylcarbinol). CH_3COCH_2OH; m.w. 74.05; col. liq.; m.p. −17; s.w.; s.al.

acetonaphthalide. See naphthylamine, N-acetyl-.

2-acetonaphthone, 4-bromo-1-hydroxy- (2-acetyl-4-bromo-1-naphthol). $CH_3COC_{10}H_5BrOH$; m.w. 264.99; yel. need.; m.p. 127; i.w.; s.al.

2-acetonaphthone, 1-hydroxy- (1-hydroxy-2-naphthyl methyl ketone; 2-acetyl-1-naphthol). $CH_3CO-C_{10}H_6OH$; m.w. 186.08; yel. need.; m.p. 99-101; i.w.; s.al.

2-acetonaphthone, 1-hydroxy-4-nitro-. $CH_3COC_{10}H_5(NO_2)OH$; m.w. 231.08; yel. need.; i.w.; s.al.

1-acetonaphthone, α-phenyl-. See ketone, benzyl 1-naphthyl.

acetone (2-propanone; dimethyl ketone). CH_3COCH_3; m.w. 58.05; col. inflam. liq.; m.p. −95; b.p. 56.5; s.w.; s.al.

acetone number. Degree of polymerization of a bodied vegetable oil measured by amount of matter insoluble in acetone.

acetone oil. See oil, acetone.

acetone, acetonyl-. See 2, 5-hexanedione.

acetone acetyl-. See 2, 4-pentanedione.

acetone, allyl-. See 5-hexen-2-one.

acetone, anisal-. See 3-buten-2-one, 4-p-anisyl-.

acetone, azine (dimethylketazine; diisopropylidenehydrazine). $(CH_3)_2C:NNC(CH_3)_2$; m.w. 112.11; col. liq.; b.p. 131; s.w.; s.al.

acetone, benzal- (methyl styryl ketone; 4-phenyl-3-buten-2-one; benzylideneacetone; cinnamyl methyl ketone; acetocinnamone). $C_6H_5CH:CH-COCH_3$; m.w. 146.08; col. lustr. pl.; m.p. 42; b.p. 260-2; i.w.; s.al.

acetone, benzoyl- (1-phenyl-1, 3-butanedione; α-acetylacetophenone; methyl phenacyl ketone; acetylbenzoylmethane). $C_6H_5COCH_2COCH_3$; m.w. 162.08; col. pr.; m.p. 61; b.p. 261-2; s.w.; s.al.

acetone, benzyl-. See 2-butanone, 4-phenyl-.

acetone, benzylidene. See acetone, benzal-.

acetone chloride. See propane, 2, 2-dichloro-.

acetone-chloroform. See chloretone.

acetone, cyanohydrin. See isobutyronitrile, α-hydroxy-.

acetonediacetic acid (γ-ketopimelic acid; 4-oxoheptanedioic acid). $CO(CH_2CH_2COOH)_2$; m.w. 174.08; rhomb. f.w.; m.p. 143; s.w.; s.al.

acetone, dibenzal-. See styryl ketone.

acetonedicarboxylic acid (β-ketoglutaric acid; 3-oxopentanedioic acid). $(COOH)CH_2COCH_2COOH$; m.w. 146.05; need. f.et.; s.w.; s.al.

acetone, dichloride. See propane, 2, 2-dichloro-.

acetone diethylsulfone. See propane, 2, 2-bis(ethylsulfonyl)-.

acetone, sym-diisopropyl-. See 4-heptanone, 2, 6-dimethyl-.

acetone, diisopropylidene-. See phorone.

acetone, sym-dimethyl-. See 3-pentanone.

acetone, diphenyl-. See 2-propanone, 1, 3-diphenyl-.

acetone, ethylidene-. See 3-penten-2-one.

acetone, unsym-ethylmethyl-. See 2-pentanone, 3-methyl-.

acetone, 2-fural-. See 3-buten-2-one, 4-(2-furyl)-.

acetone, furfural. C_4H_3O-CH:CH-$COCH_3$; m.p. 40; b.p. 135-7 [34]; i.w.; s.al.

acetone, furfurylidene-. See 3-buten-2-one, 4-(2-furyl)-.

acetone, hydroxy-. See acetol.

acetone, isonitroso-. See pyruvaldehyde, aldoxime.

acetone, isopropylidene-. See mesityl oxide.

acetone, p-methoxybenzal-. See 3-buten-2-one, 4-p-anisyl-.

acetone, methyl. See methyl acetone.

acetone, oxime. See acetoxime.

acetone, phenacyl-. See valerophenone, γ-keto-.

acetone, phenylhydrazone (2-propanone phenylhydrazone). $(CH_3)_2C:N_2H-C_6H_5$; m.w. 148.11; rhomb. cr. or oil.; m.p. 23-5; b.p. 163 [50]; s.w.; s.al.

acetone, semicarbazone (2-propanone semicarbazone). $(CH_3)_2C:NNH-CONH_2$; m.w. 115.09; col. need. f.w.; m.p. 187-8; s.w.; s.al.

acetone, sodium bisulfite compound. $(CH_3)_2C(OH)OSO_2Na$; m.w. 162.11; wh. leaf.; s.w.; s.al.

acetonic acid. See isobutyric acid, α-hydroxy-.

acetonitrile (ethanenitrile; methyl cyanide). CH_3CN; m.w. 41.03; col. liq.; m.p. −41 to −44; b.p. 82; s.w.; s.al.

acetonitrile, allyl-. See 4-pentenenitrile.

acetonitrile, benzoyl- (β-ketohydrocinnamonitrile; 3-oxo-3-phenylpropanenitrile; α-cyanoacetophenone). $C_6H_5-COCH_2CN$; m.w. 145.06; leaf.; m.p. 80-1; s.w.; s.al.

acetonitrile, diethyl-. See butyronitrile, α-ethyl-.

acetonitrile, ethylmethyl-. See butyronitrile, α-methyl-.

acetonitrile, 2-furyl-. See 2-furanacetonitrile.

acetonitrile, imino-. See acetonitrile, iminodi-.

acetonitrile, iminodi- (α, α'-dicyanodimethylamine; iminoacetonitrile [incorrect]). $NH(CH_2CN)_2$; m.w. 95.06; col. leaf. f.et.; m.p. 75; s.w.; s.al.

acetonitrile, isobutyl-. See isocapronitrile.

acetonitrile, methylethyl-. See butyronitrile, α-methyl-.

acetonitrile, phenyl-. See α-tolunitrile.

acetonitrile, trimethyl-. See propionitrile, α, α-dimethyl-.

acetonitrile, trinitro- (trinitroethanenitrile). $(NO_2)_3CCN$; m.w. 176.03; waxy; m.p. 41.5.

acetonitrile, vinyl-. See allyl cyanide.

acetonitrolic acid (ethylnitrolic acid). $CH_3(NO_2)C:NOH$; m.w. 104.05; yel. rhomb. f.w. or et.; m.p. 88; s.w.; s.al.

acetonylacetone. $CH_3(CO)CH_2-CH_2(CO)CH_3$; a colorless liquid; b.p. 191.3; s.w.; a small percentage of this liquid greatly reduces the viscosity of nitrocellulose, cellulose acetate, and Vinylite resin lacquers; a 1, 4-diketone which condenses with reagents to form ring compounds; it has a definite tanning effect on hides and skins.

acetonylamine. See 2-propanone, 1-amino-.

o-acetophenetide (o-ethoxyacetanilide; N-acetyl-o-phenetidine). $CH_3CONH-C_6H_4OC_2H_5$; m.w. 179.11; leaf.; m.p. 79; b.p. >250; i.w.; s.al.

p-acetophenetide (p-ethoxyacetanilide; p-acetphenetidine). $CH_3CONHC_6H_4-OC_2H_5$; m.w. 179.11; wh. powd., or monocl. pr. or leaf.; m.p. 134.7; s.w.; s.al.

p-acetophenetide, α-amino-. See phenecoll.

acetophenone (methyl phenyl ketone; hypnone; acetylbenzene). $CH_3CO-C_6H_5$; m.w. 120.06; col. liq. or pl.; m.p. 19.7; b.p. 202.3; i.w.; s.al.

acetophenone, α-acetonyl-. See valerophenone, γ-keto-.

acetophenone, α-acetyl-. See acetone, benzoyl-.

acetophenone alcohol. See acetophenone, α-hydroxy-.

acetophenone, m-amino- (m-aminophenyl methyl ketone). $CH_3COC_6H_4-NH_2$; m.w. 135.08; yel. leaf. f.dil.al.; m.p. 99.5; b.p. 290.

acetophenone, o-amino- (o-aminophenyl methyl ketone; o-acetylaniline). $CH_3-COC_6H_4NH_2$; 135.08; yel. oil.; i.w.

acetophenone, p-amino- (p-aminophenyl methyl ketone). $CH_3COC_6H_4NH_2$; m.w. 135.08; yel. need. f.w.; m.p. 106; b.p. 295; s.w.; s.al.

acetophenone, benzal-. See chalcone.

acetophenone, p-bromo-. $BrC_6H_4-COCH_3$; m.w. 198.97; wh. leaf. f.al.; m.p. 50; b.p. 255.5; s.w.; s.al.

acetophenone, α-bromo- (phenacyl bromide). $BrCH_2COC_6H_5$; m.w. 198.97; trim. (rhomb.) pr.f.al.; m.p. 50; b.p. 140 [12]; i.w.; s.al.

acetophenone, α-bromo-p-methyl- (p-methylphenacyl bromide). $CH_3C_6H_4-COCH_2Br$; m.w. 212.99; col. need. or leaf. f.al.; m.p. 49-51.

acetophenone, α-bromo-p-phenyl- (p-phenylphenacyl bromide). $BrCH_2-COC_6H_4C_6H_5$; m.w. 275.00; lng. col. need.; m.p. 125.5; s.al.

acetophenone, 4-tert.-butyl-2-methyl-3, 6-dinitro- (musk ketone; musk C). $CH_3COC_6H(C_4H_9)(CH_3)(NO_2)_2$; m.w. 280.14; m.p. 136; i.w.; s.al.

o-acetophenonecarboxylic acid. See benzoic acid, o-acetyl-.

acetophenone, α-chloro- (phenacyl chloride). $ClCH_2COC_6H_5$; m.w. 154.51; col. rhomb.; m.p. 59; b.p. 247; i.w.; s.al.

acetophenone, p-chloro- (methyl p-chlorophenyl ketone). $CH_3CO-C_6H_4Cl$; m.w. 154.51; cr.; m.p. 20; b.p. 232; i.w.; s.al.

acetophenone, α-cyano-. See acetonitrile, benzoyl-.

acetophenone, p, α-dibromo- (p-bromophenacyl bromide). $BrCH_2CO-C_6H_4Br$; m.w. 277.88; fine need.; m.p. 109.7; i.w.; s.al.

acetophenone, 2, 4-dihydroxy-. See resacetophenone.

acetophenone, 2, 5-dihydroxy- (2-acetylhydroquinone; quinacetophenone). $CH_3COC_6H_3(OH)_2$; m.w. 152.06; yel. need.; m.p. 202; i.w.; s.al.

acetophenone, α-ethoxy-α-phenyl-. See benzoin, ethyl ether.

acetophenone, α-hydroxy- (benzoylcarbinol; phenacyl alcohol; acetophenone alcohol). $C_6H_5COCH_2OH$; m.w. 136.06; hex. pl.; m.p. 95; b.p. 119 [11]; s.w.; s.al.

acetophenone, 2-hydroxy-4-methoxy-. See peonol.

acetophenone, α-hydroxy α-phenyl-. See benzoin.

acetophenone, α-hydroxy-p-phenyl-. See "p-phenylphenacyl ester" under acetic acid, chloro-; butyric acid; caproic acid, etc.

acetophenone, α-hydroxy-p-phenyl-, acetate (p-phenylphenacyl acetate). $CH_3-COOCH_2COC_6H_4C_6H_5$; m.w. 254.11; m.p. 111.

acetophenone, α-hydroxy-p-phenyl-, benzoate (p-phenylphenacyl benzoate). $C_6H_5COOCH_2COC_6H_4C_6H_5$; m.w. 316.12; m.p. 167.

acetophenone, 5-isopropyl-2-methyl- (carvacryl methyl ketone; 2-acetyl-p-cymene). $CH_3COC_6H_3(CH_3)-CH(CH_3)_2$; m.w. 176.12; liq.; b.p. 240.

acetophenone, p-methoxy- (p-anisyl methyl ketone; p-acetylanisole). $CH_3OC_6H_4COCH_3$; m.w. 150.08; pl. f.et.; m.p. 38-9; b.p. 258; s.w.; s.al.

acetophenone, p-methyl- (methyl p-tolyl ketone). $CH_3COC_6H_4CH_3$; m.w. 134.08; col. need. or pa. yel. liq.; m.p. 28; b.p. 222; i.w.; s.al.

acetophenone, m-nitro-. $CH_3CO-C_6H_4NO_2$ [3]; m.w. 165.06; need.; m.p. 81; b.p. 202; i.w.; s.al.

acetophenone, oxime. $C_6H_5C(:NOH)-CH_3$; m.w. 135.08; col. need. f.w.; m.p. 58; s.w.; s.al.

acetophenone, α-phenyl-. See desoxybenzoin.

acetophenone pinacol. See 2, 3-buta-

nediol, 2, 3-diphenyl-.

acetophenone pinacolin. See 2-butanone, 3, 3-diphenyl-.

acetophenone, 2, 3, 4-trihydroxy-. See gallacetophenone.

acetophenone, α-triphenyl-. See β-benzopinacolin.

acetopropionic acid. See levulinic acid.

α-acetothienone. See ketone, methyl 2-thienyl.

acetothioamide. See acetamide, thio-.

2-acetothiophenide. See acetamide, N-2-thienyl-.

m-acetotoluide (N-acetyl-m-toluidine; acet-m-toluidide). $CH_3CONHC_6H_4CH_3$; m.w. 149.09; monocl. f.w.; m.p. 65.5; b.p. 303; s.w.; s.al.

o-acetotoluide (o-methylacetanilide; N-acetyl-o-toluidine; acet-o-toluidide). $CH_3CONHC_6H_4CH_3$; m.w. 149.09; col. monocl.; m.p. 110; b.p. 296; s.w.; s.al.

p-acetotoluide (N-acetyl-p-toluidine; acet-p-toluidide). $CH_3CONHC_6H_4CH_3$; m.w. 149.09; col. monocl. or tricl.; m.p. 151-3; b.p. 307; s.w.; s.al.

m-acetotoluide, N-methyl-. $(CH_3)(CH_3CO)NC_6H_4CH_3$; m.w. 163.11; cr.; m.p. 66; s.al.

o-acetotoluide, N-methyl- (N-acetyl-N-methyl-o-toluidine). $(CH_3)(CH_3CO)NC_6H_4CH_3$; m.w. 163.11; cr.; m.p. 56; b.p. 260; s.w.; s.al.

p-acetotoluide, N-methyl-. $(CH_3)(CH_3CO)NC_6H_4CH_3$; m.w. 163.11; leaf.; m.p. 80; b.p. 283; s.al.

acetoxime (2-propanone oxime; acetone oxime). $(CH_3)_2C{:}NOH$; m.w. 73.06; col. pr.; m.p. 61; b.p. 136.3; s.w.; s.al.

2, 4-acetoxylide (aceto-as-m-xylidide; 2, 4-dimethylacetanalide). $CH_3CONHC_6H_3(CH_3)_2$; m.w. 163.11; need.; m.p. 129-30; s.w.; s.al.

aceto-as-m-xylidide. See 2, 4-aceto-xylide.

p-acetphenetidine. See p-acetophenetide.

acettoluidide. See acetotoluide.

aceturic acid (N-acetylglycine; acetamidoacetic acid). $CH_3CONHCH_2COOH$; 117.06; need. f.w.; m.p. 206; s.w.; s.al.

aceturic acid, N-phenyl- (N-acetyl-N-phenylglycine). $C_6H_5N(CH_3CO)CH_2COOH$; m.w. 193.09; m.p. 172-3.5.

acetyl value. Number of mg. of potassium hydroxide required for saponification of acetyl assimilated by 1 g. of fat on acetylation; a measure of the free hydroxyl groups present.

acetyl bromide (ethanoyl bromide). CH_3COBr; m.w. 122.94; col. fum. liq.; m.p. −96.5; b.p. 76.7.

acetyl bromide, bromo- (bromoethanoyl bromide). $CH_2BrCOBr$; m.w. 201.85; b.p. 147-50.

acetylbutyl ricinoleate. See butylacetyl ricinoleate.

acetyl cellulose. See cellulose acetate, penta-, tetra-, and tri-.

acetyl chloride (ethanoyl chloride). CH_3COCl; m.w. 78.48; col. inflam. liq.; m.p. −112; b.p. 51-2.

acetyl chloride, chloro- (chloroethanoyl chloride). $CH_2ClCOCl$; m.w. 112.93; col. liq.; b.p. 108-10; sp.gr. 1.495 at 0/4. very irritating to eyes and mucous membrane.

acetyl chloride, dichloro- (dichloroethanoyl chloride). $CHCl_2COCl$; m.w. 147.38; col. liq.; b.p. 108.

acetyl chloride, phenyl-. See α-toluyl chloride.

acetyl chloride, trichloro-. CCl_3COCl; m.w. 181.83; col. liq.; b.p. 118.

acetyl cyanide. See pyruvonitrile.

acetyl disulfide (diacetyl disulfide). $(CH_3CO)_2S_2$; m.w. 150.17; col. cr.; m.p. 20; i.w.; s.al.

acetylene (ethyne, ethine). $CH{:}CH$; m.w. 26.02; col. inflam. gas; m.p. −81.8; b.p. −88.5; s.w.; s.al.

acetylene black. Graphitic type of carbon black obtained by incomplete combustion of acetylene; apparent density 0.21.

acetylene series. Unsaturated hydrocarbons of formula C_nH_{2n-2}; e.g. acetylene, C_2H_2.

acetylene, amyl-. See 1-heptyne.

acetylene, bromo- (bromoethyne; ethynyl bromide). $CH{:}CBr$; m.w. 104.92; pois. gas; b.p. +2; s.w.

acetylene, butyl-. See 1-hexyne.

acetylene, butylmethyl-. See 2-heptyne.

acetylene carboxylic acid, ethyl-. See 2-pentynoic acid.

acetylene, chloro- (chloroethyne). $CH{:}CCl$; 60.46; unst. spon. inflam. gas; s.w.; s.al.

acetylene, dibromide. See ethylene, 1, 2-dibromo-.

acetylenedicarboxylic acid (butynedioic acid). $COOHC{:}CCOOH$; m.w. 114.02; lng. pr.; m.p. 179; s.w.; s.al.

acetylene dimethyl-. See 2-butyne.

acetylene, diphenyl- (diphenylethyne; tolan). $C_6H_5C{:}CC_6H_5$; m.w. 178.08; col. monocl. leaf. f.al.; m.p. 62.5; b.p. 300; i.w.; s.al.

acetylenediurein. See glycoluril.

acetylene, divinyl-. See 1, 5-hexadien-3-yne.

acetylene, ethyl-. See 1-butyne.

acetylene ethylmethyl-. See 2-pentyne.

acetylene, ethylphenyl-. See benzene-1-butynyl-.

acetylene, n-heptyl-. See 1-nonyne.

acetylene, n-hexyl-. See 1-octyne.

acetylene, isopropyl-. See 1-butyne, 3-methyl-.

acetylene, methyl-. See propyne.

acetylene, methylphenyl-. See propyne, 1-phenyl-.

acetylene, methylpropyl-. See 2-hexyne.

acetylene, n-octyl-. See 1-decyne.

acetylene, phenyl-. See benzene, ethynyl-.

acetylene, n-propyl-. See 1-pentyne.

acetylene, tetrabromide. See ethane, 1, 1, 2, 2-tetrabromo-.

acetylene, tetrachloride. See ethane, 1, 1, 2, 2-tetrachloro-.

acetylene, vinyl-. See 3-buten-1-yne.

acetyl fluoride (ethanoyl fluoride). CH_3COF; m.w. 62.02; col. liq. or gas; m.p. < -60; b.p. 20-1; s.al.

acetyl iodide (ethanoyl iodide). CH_3COI; m.w. 169.94; col.-br. fum. liq.; b.p. 104-6.

acetyl oxide. See acetic anhydride.

acetyl peroxide (ethanoyl peroxide; diacetyl peroxide). $(CH_3CO)_2O_2$; m.w. 118.05; col. leaf.; m.p. 30; b.p. 63 [n]; s.w.

acetyl resorcinol. See resorcin monoacetate.

achromatic. Free from chromatic aberration (q.v.).

achromatic lens. Lens made of selected glasses of different dispersive powers which produces images at the same point for light of different wave lengths.

achroödextrin. $C_{36}H_{62}O_{31}$?; m.w. 990.48; amor. wh.; s.w.; i.al.

acicular. Spine or needle shaped; needle-like crystal whose length is three or more times its width.

acid. A chemical compound containing hydrogen replaceable by metallic elements and which produces hydrogen ions in solution, characterized by sour taste, turning litmus red, and neutralizing bases to form salts; a proton donor; very broadly, an ionic compound which on being dissolved in a given solvent will yield the same cation as the solvent but a different anion.

acid 1:2:4. See 2-naphthol-4-sulfonic acid, 1-amino-.

acid anhydride. See acidic oxide.

acid, binary. Acid containing no oxygen; e.g. hydrochloric acid, HCl.

acid black. An organic azo dye.

acid, dibasic. Acid which yields two hydrogen ions per molecule in solution, e.g. sulfuric acid, H_2SO_4.

acid dye. One which dyes silk and wool directly from an acid bath; usually a sodium salt of a sulfonic acid.

acid egg (blow-case; montejus). Apparatus for moving acids or other liquids by air pressure.

acid, monobasic. Acid which yields one hydrogen ion per molecule in solution, e.g. nitric acid, HNO_3.

acid phosphate. See superphosphate.

acid salt. See salt, acid.

acid sludge. Oily or gummy acid material which separates from an oil or distillate when the latter is treated with sulfuric acid.

acid, strong. Acid which ionizes highly and has many hydrogen ions in dilute solution; an ionic compound or one which reacts with water yielding a high effective concentration, or activity, of hydrogen ions.

acid, ternary. Acid containing three or more different elements; e.g. acetic acid, $HC_2H_3O_2$.

acid, tribasic. Acid which yields three hydrogen ions per molecule in solution, e.g. phosphoric acid, H_3PO_4.

acid, weak. Covalent compound which ionizes little and yields but few hydrogen ions in aqueous solution, e.g. acetic acid, $HC_2H_3O_2$.

acidate. Compound derived from a weak acid by replacement of hydrogen with metallic atoms or radicals; e.g. mercuric cyanide.

acidic oxide (acid anhydride). Oxide of a non-metal that reacts with water to form an acid, e.g. sulfur dioxide, SO_2.

acmite (aegirite). A mineral; $Na_2O \cdot Fe_2O_3 \cdot 4\,SiO_2$; monocl. blk. brnsh. or redsh.; sp.gr. 3.5-3.56; hardness 6.0-6.5.

acne. Inflammation of the sebaceous glands, a common skin disturbance of adolescents.

aconic acid (4, 5-dihydro-5-keto-3-furancarboxylic acid; formylsuccinic acid lactone). $OCH{:}C(COOH)CH_2CO$; m.w. 128.03; m.p. 164; s.al.

aconine. $C_{36}H_{51}NO_{11}$; m.w. 523.17; amor. hyg.; m.p. 132; s.w.; s.al.

aconine, acetylbenzoyl-. See aconitine.

aconine, benzoyl-. See benzaconine.

aconite. A genus of plants from whose roots and leaves is derived aconitine, a bitter, poisonous alkaloid.

aconitic acid (1, 2, 3-propenetricarboxylic acid). $C_3H_3(COOH)_3$; m.w. 174.05; col. leaf. or need. f.w.; s.w.; s.al.

aconitine (acetylbenzoylaconine). $C_{34}H_{47}NO_{11}$; m.w. 647.39; rhomb. pr.f.chl.; m.p. 188-97.8; s.w.; s.al.

aconitine, diacetyl- (aconitine O-diacetate). $C_{34}H_{47}(C_2H_3O)_2NO_{11}$; m.w. 731.42; cr.; m.p. 158; s.w.

aconitine, hydrobromide. $C_{34}H_{45}NO_{11} \cdot HBr \cdot \frac{1}{2}H_2O$; m.w. 737.32; wh. to ylsh. hex. tab. f.w.; m.p. 163, anh. 176-80; s.w.; s.al.

aconitine, hydrochloride; $C_{34}H_{45}O_{11}N \cdot HCl \cdot 3H_2O$, m.w. 737.90; wh. cr.; m.p. 149; s.w.; s.al.

aconitine, nitrate. $C_{34}H_{45}NO_{11} \cdot HNO_3 \cdot 5H_2O$; m.w. 800.48; s.w.; s.al.

aconitine, sulfate. $(C_{34}H_{45}NO_{11})_2 \cdot H_2SO_4$; m.w. 1392.86; ylsh. amor. powd.; s.w.; s.al.

acoustic absorptivity. Ratio of sound energy absorbed by a surface to that which reaches it.

acoustic compliance. Square of cross section of a conduit divided by bulk modulus of medium.

acoustic inertance. Mass of body of a medium divided by the square of the cross section of conduit in which it is contained.

acoustic ohm. Acoustic unit of 1 bar of sound pressure per $cm.^3$/sec. of volume capacity.

acoustic reflectivity. Ratio of flux density of reflected to incident sound.

acraldehyde. See acrolein.

acridine. $C_6H_4CHNC_6H_4$; m.w. 179.08; col. leaf. or rhomb. f.al.; m.p. 108; b.p. 346; s.w.; s.al.

acridine, 2-amino-5-p-aminophenyl-. See chrysaniline.

acridine, 5, 10-dihydro- (ms-dihydroacridine). $C_6H_4CH_2C_6H_4NH$; m.w. 181.09; col. cr. f.al.; m.p. 169; sublin i.w.; s.al.

acridine, dihydroketo-. See ms-acrido

acridine, 3-methyl-. $C_{13}H_9N \cdot CH_3$; m 193.09; yel. need. f.dil. al.; m.p. 1 s.al.

acridine, 5-phenyl- (ms-phenylacridin $C_6H_5C_{13}H_8N$; m.w. 255.11; monocl. need. f.al.; m.p. 181; b 404; i.w.; s.al.

ms-acridone (dihydroketo acridin $C_6H_4(CO)NHC_6H_4$; m.w. 195.08; need.; m.p. 354; i.w.; s.al.

acriflavine. A yellow dyestuff and powerful antiseptic, used for wound in dentistry, and in the treatme of gonorrhoea.

acrolein (acrylaldehyde; propenal; acryl aldehyde). $CH_2{:}CHCHO$; m.w. 56.0 col. inflam. liq.; m.p. −87.7; b. 52.5; s.w.; s.al.

acrolein, α, β-dimethyl-. See tiglald hyde.

acrolein, α-ethyl-β-propyl-. See 2-he anal, 2-ethyl-.

acrolein, β-2-furyl- (3-[2-furyl]propena furacrolein). $C_4H_3OCH{:}CHCH$ m.w. 122.05; yel. cr.; m.p. 51; b. 200; i.w.; s.al.

acrolein, β-methyl-. See crotonaldehyd

acrolein, β-phenyl-. See cinnamald hyde.

Acronal. A synthetic vinyl resin.

acrylaldehyde. See acrolein.

acrylate resin. Polymerization produc of certain derivatives of acrylic aci and metacrylic acid, as methyl an ethyl acrylate; possesses great optica clarity and high degree of ligh transmission; nearest approach to a organic glass.

acrylic resin. Polymerization product o acrylic acid; colorless, transparen plastic; e.g. Plexiglas.

acrylic acid (propenoic acid; ethylene carboxylic acid). $CH_2{:}CHCOOH$ m.w. 72.03; col. liq.; m.p. 12.3; b.p 141.9; s.w.; s.al.

acrylic acid, β-benzoyl- (4-oxo-4-phenyl 2-butenoic acid). $C_6H_5COCH{:}CHCOOH$; m.w. 176.06; leaf. $(+1H_2O)$ m.p. $+1H_2O$ 64, anh. 99; s.w.; s.al

acrylic acid, α-chloro- (2-chloropropenoic acid). $CH_2{:}CClCOOH$; m.w. 106.48 need.; m.p. 65; b.p. subl.; s.w.; s.al.

acrylic acid, β-chloro- (3-chloropropenoic acid). $CHCl{:}CHCOOH$; m.w. 106.48 leaf.; m.p. 85; s.w.; s.al.

acrylic acid, α, β-dimethyl-. See tiglic acid.

acrylic acid, α, β-diphenyl-. See cinnamic acid, α-phenyl-.

acrylic acid, ethyl ester (ethyl acrylate ethyl propenoate). $CH_2{:}CHCOOC_2H_5$; m.w. 100.06; col. liq. b.p. 99.8.

acrylic acid, β-2-furyl-. See 2-furan acrylic acid.

acrylic acid, β-hydroxy- (3-hydroxy propenoic acid). $HOCH{:}CHCOOH$ m.w. 88.03; liq.; s.w.; s.al.

acrylic acid, β-isopropyl-. See 2-pentenoic acid, 4-methyl-.

acrylic acid, α-methyl-. See methacrylic acid.

acrylic acid, cis(?)-β-methyl-. See iso crotonic acid.

acrylic acid, trans(?)-β-methyl-. See crotonic acid (α or solid).

acrylic acid, β- (3, 4-methylenedioxy styryl)-. See piperic acid.

acrylic acid, methyl ester (methyl acrylate). $CH_2{:}CHCOOCH_3$; m.w 86.05; col. liq.; b.p. 80.5; s.al.

acrylic acid, α-phenyl-. See atropic acid.

acrylic acid, β-phenyl-. See cinnamic acid.

acrylic acid, β-propyl-. See 2-hexenoic acid.

acrylic acid, β-vinyl. See 2, 4 pentadienoic acid.

acrylic aldehyde. See acrolein.

Acryloid. Synthetic resin; polymerize acrylic acid ester; s. org. sol. except a

acrylonaphthone, 1-hydroxy-β-phenyl-. (1-hydroxy-2-naphthyl styryl ketone; 2-cinnamyl-1-naphthol). C_6H_5-$CH{:}CHCOC_{10}H_6OH$; m.w. 274.11; or. leaf.; m.p. 126; i.w.; s.al.

acrylonitrile (propenenitrile; vinyl cyanide). $CH_2{:}CHCN$; m.w. 53.03; col. liq.; m.p. −82; b.p. 78-9; s.w.

acrysol. Emulsion of Acryloid.

actinic ray. Light ray that affects photographic film.

actinism. Property of radiation which produces chemical change, e.g. effect of light on photographic film.

actinium. Ac; at. wt. 227 (approx.); at. no. 89; a radioactive element.

actinium series. Radioactive series beginning with actinium.

actinolite. A mineral; $Ca(Mg, Fe)_3$-$(SiO_3)_4$; monocl. grn., gray-grn. or br.; sp.gr. 2.9-3.2; hardness 5-6.

actinon. Inert gaseous decomposition product of actinium.

action. Exertion of power or force measured by the product of work by time.

active hydrogen. Hydrogen activated by contact with a metal.

active mass. See mass, active.

activated molecule. Molecule which is capable of reacting spontaneously (uni-molecular reaction) or at the next collision with a suitable molecule (polymolecular reaction).

activated sludge. Raw sewage which has been aerated or oxidized, used as fertilizer.

activation. Process which involves no chemical reaction but changes increasing the internal energy of one or more molecules.

activation energy. Energy necessary to activate a particle, atom, to cause it to react chemically; potential energy of the transition state (q.v.).

activity coefficient. Factor which when multiplied by molecular concentration gives the active mass or effective concentration.

acute angle. Angle smaller than a right angle (90°).

acyl halide. Acid derivative in which the −OH of the −COOH group has been replaced by a halogen atom.

acyl radical. Organic radical obtained by dropping the hydroxyl, OH, from its acid group, e.g. formyl H·CO–, acetyl CH_3CO–.

acylation. Reaction in which an acyl radical (q.v.) is introduced into an organic compound.

acylous. A group which tends inductively to lower the basicity of the molecule of which it forms a part, e.g. $-NO_2$.

adenine (6-aminopurine). C_5H_3-$N_4{\cdot}NH_2$; m.w. 135.08. $+3H_2O$; need. f.c.w.; m.p. 365; s.w.; s.al.

adenylic acid. Nucleotide of adenine, ribose and phosphoric acid.

adeps lanae (lanolin, wool-fat, wool grease). Purified grease from sheep's wool; wh. amorp.; s.al.; used in mfr. of rosin soaps, leather industry, in salves, cosmetics, and toilet preparations. See also, wool fat.

adhesion, specific. Adhesion thru intermolecular attraction.

adhesion tension. Measure of degree to which a solid is wetted by a liquid; interaction between surfaces of two adjacent bodies which makes them cling together.

adiabatic change. Alteration of conditions of a body without any exchange of heat with the surroundings.

adiabatic process. A process in which there is no exchange of heat with the surroundings.

Adinol. Triethyl citrate.

adipaldehyde (hexanedial; adipic dialdehyde). $CHO(CH_2)_4CHO$; m.w. 114.08; oil; b.p. 94; s.w.; s.al.

adipamide (hexanediamide; adipic diamide). $(CH_2CH_2CONH_2)_2$; m.w. 144.11; col. pl.; m.p. 220; s.w.; s.al.

adipic acid. (hexanedioic acid; 1, 4-butanedicarboxylic acid). $COOH(CH_2)_4COOH$; m.w. 146.08; col. monocl. pr.; m.p. 151-3; b.p. 265 [100]; s.w.; s.al.

adipic acid, dibutyl ester. $(CH_2CH_2$-$COOC_4H_9)_2$; m.w. 258.20; m.p. −37.5; b.p. 183 [14]; i.w.; s.al.

adipic acid, diethyl ester (ethyl adipate). $(CH_2CH_2COOC_2H_5)_2$; m.w. 202.14; col. liq.; m.p. −21; b.p. 239-41 [761]; s.w.; s.al.

adipic acid, Methyl Hexalin ester (Sipalin AOM). Water-wh. liq.; sp.gr. 1.0910; b.p. 200-230; a plasticizer for nitrocellulose and light rubber.

adipic acid, piperazinium salt. $C_4H_{10}N_2{\cdot}$-$C_6H_{10}O_4$; m.w. 232.17; wh. cr.; s.w.; s.al.

adipic dialdehyde. See adipaldehyde.

adipic diamide. See adipamide.

adipic ketone. See cyclopentanone.

adipinic acid. See adipic acid.

adipocere. Greasy material formed in decomposition of animal fats.

adipocerite. See hatchettite.

adipyl chloride (hexanedioyl chloride). $ClCO(CH_2)_4COCl$; m.w. 192.98; col. liq.

Aditex LU-1. Soluble terpene oils used for kier boiling in the textile industry.

admittance. Reciprocal of impedance.

adrenaline. (3, 4-dihydroxy-α-[methylamino methyl] benzyl alcohol; suprenine; epinephrine). $(HO)_2$-$C_6H_3CH(CH_2NHCH_3)OH$; m.w. 183.11; wh.-br. powd.; s.w.; s.al. Hormone secreted by adrenal glands, affecting development and constriction of blood vessels, raising blood pressure and, also, preventing bleeding from capillaries.

adsorption. Taking up of a substance by a solid surface; concentration change at an interface.

advection. Heat transfer thru horizontal air movement.

aegirite. See acmite.

aeolotropic (eolotropic). Change of physical properties with change of position or direction, e.g. change of refractive index on changing position of double refracting crystal; not isotropic.

aerobic. Referring to bacteria which can use only free atmospheric oxygen.

aerobiosis. Life requiring oxygen.

aerodynamics. Science concerned with motion of air and other gases and of forces acting on bodies moving in them.

aerogen. Microorganism which forms gas during its metabolism.

Aerosols. Series of esters of sulfonated maleic anhydride, used as wetting agents.

Aerosol MA, AY. Sulfonated esters of a dicarboxylic acid used as general purpose wetting agents.

Aerosol US. An alkyl aryl sulfonate used as a wetting agent and detergent in the processes concerned with electroplating, pigments and paper.

Aerosol OT. Dioctyl ester of sodium sulfosuccinate used as wetting-agent.

aesculetin, aesculin. See esculetin, esculin.

affinity. That force which causes substances to combine chemically.

after-flow. Plastic flow in solids continuing after external forces have ceased to act.

after-glow. Luminescence remaining in rarified gas after electrodeless charge has passed thru; glowing after flame of a burning material has been extinguished.

agalmatolite. See pyrophyllite.

agar (agar-agar). Dried seaweed widely used as a nutritive medium for the cultivation of bacteria and fungi.

agar-agar. See agar.

agate. A natural aggregate of various forms of crystalline and colloidal silica; see also chalcedony.

agate jasper. See jasper.

aging. Changes in physical or chemical properties which occur with time, brought about by air, sunlight, temperature etc.

aging test. Rapid method of determining effect of time on chemical or physical properties of a material.

agglutinin. Antibody which causes its antigens to clump together.

aggregation. Any group of molecules.

agitation. Process of mixing fluids.

agonic line. Imaginary line connecting all places with zero magnetic declination, on a map.

air lift. Device for raising liquids by air pressure.

aji-no-moto. Water soluble meat flavor consisting essentially of sodium glutamate.

Akco resin. Natural resin modified with phenol condensate.

Aktivin. See chloramine-T.

Aktivin S. Active base, $CH_3C_6H_4$-$SO_2NClNa{\cdot}3H_2O$; solubilizing agent for sizes and finishes.

-al. Suffix denoting an aldehyde, e.g. ethanal.

alabamine. Ab; at. wt. 221; at. no. 85; an element recently discovered by Allison by the method of magneto-optic analysis. Its most stable compounds are the peralabamates.

alabandite (manganblende). A mineral; MnS; cub. iron-blk.; sp.gr. 3.95-4.04; hardness 3.5-4.0; see also manganese sulfide.

alabaster. A marble-like variety of the mineral gypsum, $CaSO_4{\cdot}2H_2O$, used for ornamental objects.

alalite. See diopside.

d-alanine (d-α-aminopropionic acid; d-2-aminopropanoic acid). $CH_3CH(NH_2)$-$COOH$; m.w. 89.06; rhomb. f.w.; s.w.; s.al.

dl-alanine (dl-2-aminopropanoic acid; dl-α-aminopropionic acid). CH_3-$CH(NH_2)COOH$; m.w. 89.06; need. or pr. f.w.; m.p. 295; s.w.; s.al.

l-alanine (l-α-aminopropionic acid; l-2-aminopropanoic acid). $CH_3CH(NH_2)$-$COOH$; m.w. 89.06; pr. f.al.; s.w.; s.al.

β-alanine (3-aminopropanoic acid; β-aminopropionic acid). $NH_2CH_2CH_2$-$COOH$; m.w. 89.06; rhomb. pr. f.al.; s.w.; s.al.

dl-alanine, N-benzoyl- (α-benzamidopropionic acid). $CH_3CH(NHCO$-$C_6H_5)COOH$; m.w. 193.09; col. pr. or pl.; m.p. 163-5; s.w.; s.al.

d-alanine, β-[(3, 5-diiodo-4-hydroxyphenoxy)-3, 5-diiodophenyl]-. See d-thyroxine.

alanine, β, β′-dithiodi-. See cystine.

alanine, β, β′-dithiodi-, β-hydroxy-. See serine.

dl-alanine, ethyl ester hydrochloride (ethyl α-aminopropionate hydrochloride). $CH_3CHNH_2COOC_2H_5{\cdot}HCl$; m.w. 153.56; col. need.; m.p. 64-8; s.w.; s.al.

alanine, β-p-hydroxyphenyl-. See tyrosine.

alanine, β-p-hydroxyphenyl-, β-(3-indyl)-. See tryptophan.

alanine, β-p-hydroxyphenyl-, β-mercapto-. See cysteine.

alanine, β-p-hydroxyphenyl-, N-methyl-. $CH_3CH(NHCH_3)COOH$; m.w. 103.08; col. rhomb. f.al.; s.w.; s.al.

d-alanine, β-phenyl- (d-α-amino-β-phenylpropionic acid). $C_6H_5CH_2$-$CH(NH_2)COOH$; 165.09; leaf. f.w.; s.w.; l.al.

dl-alanine, β-phenyl-. $C_6H_5CH_2$-$CH(NH_2)COOH$; m.w. 165.09; monocl. f.w. or leaf. f.al.; s.w.; s.al.

l-alanine, β-phenyl- (l-α-aminohydrocinnamic acid). $C_6H_5CH_2CH(NH_2)$-$COOH$; m.w. 165.09; leaf.; s.w.; s.al.

alantolactone. See helenin.

Albalith. A white lithopone used in paints.

albane. White resin present in gutta percha.

Albany slip. A clay found near Albany, N. Y.

Albatex BD. Sodium m-nitrobenzenesulfonate; textile assistant.

Albatex O. A phenolic condensate used as a mordant and fixing agent for basic dyestuffs.

Albatex PO. Sulfonate of a complex stearyl-alkyl compound used as a levelling, penetrating or stripping assistant for vat, direct and dispersion dyestuffs; also used as a softener.

Albatex WS. A phenolic condensate used as a reserve for silk and in union dyeing.

albedo. Proportion of sun's light reflected from the moon or a planet.

Alberid. Synthetic tar-acid resin.

Albertalates. Synthetic alkyd resin.

Albertol. Synthetic tar-acid resin soluble in linseed oil and used in the manufacture of oil varnishes.

albite (sodium feldspar). A mineral; $Na_2O{\cdot}Al_2O_3{\cdot}6\,SiO_2$; tricl. gray, or rarely colored; sp.gr. 2.61-2.64; hardness 6.0-6.5.

Albolene. A liquid mixture of hydrocarbons obtained from petroleum and used in medicine.

Albone. 100 vol. (13%) hydrogen peroxide.

albumen. See albumin.

albumin. (albumen). Native protein soluble in water and dilute salt solutions; usually refers to the white of the egg.

albumin, blood. A natural product obtained from serum drained from blood; br. amorp. lumps; s.al.; s.w.; used in dye preparations, foodstuffs, adhesives, artificial ivory, fixing gold on leather, and in medicine.

albumin, egg. A natural product obtained by drying egg whites; yel. amorp. powd.; s.al.; used in mfr. of leather, adhesives, foodstuffs, as a wine-clarifying agent.

albumin, milk. An albumin obtained from milk by coagulating the casein; used in mfr. of adhesives, varnishes, and substitutes for ivory.

albumin, vegetable. See vegetable albumin.

albuminate. Substance in which a metal is loosely combined with albumin.

albuminoid (schleroprotein B). Protein found in bones and connective tissues of animals; insol. in most reagents; e.g. keratin.

albumose. See proteose.

Alclad. Duralumin coated with 99.7% aluminum; resistant to corrosion by sea water.

alcogel. Colloidal gel made with alcohol.

alcohol. Hydrocarbon derivative in which one or more hydroxyl groups have replaced a corresponding number of hydrogen atoms, e.g. CH_3OH; see ethyl alcohol.

alcohol, absolute. Ethyl alcohol containing not more than 0.2% of water.

alcohol, denatured. Ethyl alcohol to which ingredients have been added to make it unfit for beverage purposes, the denaturants used being selected to be least objectionable for its particular use in the finished product; completely denatured alcohol used for anti-freeze purposes. Government permit regulates specially denatured alcohol.

alcohol, polyhydric. See polyhydric alcohol.

alcohol, primary. See primary alcohol.

alcohol, trihydric. See trihydric alcohol.

alcoholometer. Instrument for testing percentage of alcohol by volume.

alcoholysis. A chemical reaction in which a new alcohol group is introduced by replacement.

alcosol. Colloidal solution made with alcohol instead of water.

Aldamine. Aldehyde-ammonia.

aldehol. Liquid mixture resulting from oxidation of kerosene; sp.gr. 0.825 @ 60° F.; b.p. 200-290° C.; s.al.; used as alcohol denaturant.

aldehyde. Hydrocarbon derivative containing the group H—C=O, e.g. acetaldehyde (q.v.), CH_3CHO.

aldehyde-ammonia. See acetaldehyde-ammonia.

aldehyde bisulfite. See acetaldehyde sodium bisulfite.

aldehyde, dichloro-. See acetaldehyde, dichloro-.

aldehyde, tribromo-. See bromal.

aldehydine (5-ethyl-2-methylpyridine). $(C_2H_5)(CH_3)C_5H_3N$; m.w. 121.09; liq.; b.p. 174; i.w.; s.al.

aldimine. A compound of the general formula R·CH:NH.

aldol (3-hydroxybutanal; β-hydroxybutyraldehyde). $CH_3CHOHCH_2CHO$; m.w. 88.06; col. syrupy liq.; b.p. 83 [20]; s.w.; s.al.

aldol condensation. Reaction wherein two molecules of acetaldehyde unite to form $C_4H_8O_2$ (aldol) under the influence of cold alkalies.

aldose. Monosaccharide containing the group H—C=O / H—C—OH.

aleppo galls. See nut galls.

aleurone. Proteid grains forming outside layer of seeds such as wheat.

Alfrax. A trade name for electrically fused alumina, Al_2O_3, used as a refractory.

Alftalate. Synthetic alkyd resin.

algae. A division of submerged or subaqueous plants growing in fresh and salt water including the seaweeds, lavers, Irish moss, confervae and dulse; ashes used in making iodine.

algic acid. See alginic acid.

algicide. An agent which destroys algae.

algin. See alginic acid.

alginic acid (algic acid; algin). A protein material derived from kelp (seaweeds); br. or wh. powder or fibers; i.w.; i.al.; s.alk.; used in boiler compounds, jellies, plastics, paper, emulsions, waterproofing.

alicyclic. Referring to the aliphatic cyclic compounds.

alidade. Instrument for plane table surveying.

alignment chart. Nomograph in which all the axes are vertical.

aliphatic. Referring to any organic compound that has an open chain of carbon atoms, whether normal or forked, saturated or unsaturated.

aliquot. A definite proportion of a given quantity.

alizarin (1, 2-dihydroxyanthraquinone). $C_6H_4(CO)_2C_6H_2(OH)_2$; m.w. 240.06; or. or red. tricl. or rhomb.; m.p. 290; b.p. 430; s.al.

alizarin(e) assistant. See castor oil, sulfonated.

alizarin bordeaux. See quinalizarin.

alizarin(e) lake. Dark red with bluish undertone or purple pigment made from anthracene and an inorganic product base such as aluminum sulfate.

alizarin orange. See alizarin, 3-nitro-.

alizarin yellow A. See benzophenone, 2, 3, 4-trihydroxy-.

β-alizarin amide. See anthraquinone, 2-amino-1-hydroxy-.

6(or 7)-alizarincarboxylic acid (5, 6 [or 7, 8]-dihydroxy-2-anthraquinonecarboxylic acid). $(OH)_2C_6H_2(CO)_2C_6H_2COOH$; m.w. 284.06; red. need.; m.p. 305; s.w.; s.al.

alizarin, 3-methyl-. $C_6H_4(CO)_2C_6HCH_3(OH)_2$; m.w. 254.08; or. need.; m.p. 229; s.al.*

alizarin, 3-nitro- (alizarin orange; β-nitroalizarin). $C_6H_4(CO)_2C_6H(OH)_2NO_2$; m.w. 285.06; or. need. f.bz.; s.w.; s.al.

alizarin, 4-nitro- (α-nitroalizarin). $C_6H_4(CO)_2C_6H(OH)_2NO_2$; m.w. 285.06; yel. need. f.al.; s.w.; s.al.

alkali. See base.

alkali, direct. Alkali which, when taken orally in sufficient amount, neutralizes the gastric acid, e.g. sodium bicarbonate.

alkali, indirect. Sodium and potassium lactates, citrates and acetates which exert no appreciable action in stomach, but after metabolism increase the alkali reserve.

alkali neutralization number. Milligrams of potassium hydroxide for neutralizing 1 gram of oil.

alkaline detergent. See detergent, alkaline.

alkaline earth. An oxide of barium, strontium, or calcium; sometimes the oxide of magnesium is included in this category.

alkalinity, primary. Classification of soluble salts of alkalis and carbonic acids found in the soil, e.g. sodium carbonate.

alkalinity, secondary (temporary hard salts). Classification of soluble salts of alkali earths and weak acids found in the soil.

alkaloid. Nitrogen base of vegetable origin, e.g. nicotine; usually a carbohydrate containing nitrogen; possesses bitter taste and marked physiological properties; i.w.; s. in neutral organic solvents.

alkane. Open chain hydrocarbon.

alkanet (alkanna). The powdered roots and leaves of a shrub from the Near East, used for dyeing the nails, teeth, hair, and garments.

alkanna. See alkanet.

alkannin. $C_{15}H_{14}O_4$(?); m.w. 258.11; red. amor.; i.w.; s.al.

Alkanol B,HG,SA. A sodium alkyl naphthalene sulfonate used in the textile, paper, leather and pigment industries as a wetting agent; s.w.; s.al.

Alkanol S. Sodium tetrahydronapthalene sulfonate; dispersing agent; wh. pd.; s.w.

Alkanol SA. Less pure grade of Alkanol-B (q.v.).

alkargen. See arsinic acid, dimethyl-.

alkarsin, alkarsine. See arsenic oxide, bisdimethyl-.

Alkazene 9, 10, 17. Chloroethyl benzenes.

Alkazene 21, 31. Polyisopropyl benzenes.

alkene. Open chain unsaturated hydrocarbon having one double bond, e.g. propene.

alkenyne. Hydrocarbon containing both a double and triple bond in the fundamental chain.

alkermes. See kermes.

Alketo acid. Complex mixture produced by controlled oxidation of petroleum fractions; used as corrosion inhibitor, lubricant, etc.

alketone. Mixture of ketones, alcohols and other compounds produced by controlled oxidation of petroleum fractions; used as corrosion inhibitors, anti-oxidants, etc.

alkoxide. Reaction product where the hydroxyl hydrogen of an alcohol is replaced by an alkali metal.

alkyd resin. Any condensation product involving a polybasic acid, like phthalic, maleic and succinic, and a polyhydric alcohol, like glycerin and the glycols, almost always with addition of modifying agents; used in paints, varnishes and lacquers.

Alkydal. A synthetic alkyd resin.

alkyl. Denoting a non-cyclic saturated hydrocarbon radical of general formula, C_nH_{2n+1}.

alkyl, metallic. Compound in which the number of alkyl radicals attached to the metallic atom corresponds to its maximum valence, e.g. $Zn(C_2H_5)_2$.

alkylation. The introduction of an alkyl radical by substitution or addition into an organic compound.

alkyne. Hydrocarbon containing a triple bond, e.g. propyne.

allanite. See orthite.

allantoin (5-ureidohydantoin; glyoxyldiureide). $C_4H_6N_4O_3$; m.w. 158.08; wh. monocl. f.h.w.; m.p. 235; s.w.; s.al.

allanturic acid (5-hydroxy-2, 4-imidazoledione; glyoxalylurea). NHCONH·COCHOH; m.w. 116.05; hyg. gum.; s.w.; i.al.

Allegheny metal. An alloy consisting of iron (69-75), chromium (17-20), nickel (7-10), silicon (.5), carbon (.02); resistant to acids, alkalis, and corrosion; trim on automobiles; roofing.

allene. See propadiene.

allene, ethyl-. See 1, 2-pentadiene.

allene, methyl-. See 1, 2-butadiene.

allergy. A sensitivity of persons to specific substances thru ingestion, breathing, or contact; see anaphylaxis.

alligatoring. Surface cracking of coating films.

allochromatic. Referring to crystals exhibiting photoconductivity.

allocrotonic acid. See isocrotonic acid.

allogenic. Originating elsewhere.

allophanamide. See biuret and corresponding derivatives.

allophane. A mineral hydrated aluminum silicate, $Al_2O_3 \cdot SiO_2 \cdot nH_2O$; sp.gr. 1.75.

allophanic acid, ethyl ester (ethyl allophanate; ethyl ureacarboxylate). $NH_2CONHCOOC_2H_5$; m.w. 132.08; need. f.w.; m.p. 192; i.w.; s.al.

Alloprene (Pergut; Dartex; Tegofan). Chlorinated rubber.

allotonic. A substance which changes the surface tension of water.

allotrimorphic. Minerals, in igneous rock, without own crystal faces or boundaries.

allotropy. State of a substance existing in different individual forms of entirely different physical properties, e.g. rhombic, prismatic and plastic sulfur.

alloxan (pyrimidinetetrone; mesoxalylurea). NHCONHCOCOCO; m.w. 142.03; anh., dk. yel.; hyd., col. rhomb. pr.; s.w.; s.al.

alloxanic acid (tetrahydro-4-hydroxy-2, 5-diketo-4-imidazolecarboxylic acid). NHCONHCOC(OH)COOH; m.w. 160.05; tricl.; s.w.; s.al.

allopolyploid. Organism with more than two haploid sets of chromosomes derived from two or more ancestral species.

alloxan, 5-oxime. See violuric acid.

alloxantin. $C_8H_4N_4O_7$; m.w. 268.06; wh. powd. or rhomb. pr.; s.w.; s.al.

alloxantin, tetramethyl-. See amalic acid.

alloy. Mixture, solid solution, or combination of two or more metals; possesses desirable properties not supplied by any one metal.

allspice. A dried, full-grown but unripe fruit cultivated in Jamaica; has a characteristic flavor and is used as a condiment.

allspice oil. See oil, allspice.

alluvium. Material deposited by rivers at lower levels.

allyl alcohol (2-propen-1-ol). $CH_2:CH-CH_2OH$; m.w. 58.05; col. liq.; m.p. −129; b.p. 97; s.w.; s.al.

allyl alcohol. For derivatives see 2-propen-1-ol.

allyl alcohol, dibromide. See 1-propanol, 2, 3-dibromo-.

allyl alcohol, dichloride. See 1-propanol, 2, 3-dichloro-.

allyl alcohol, γ-methyl-. See 2-buten-1-ol.

allyl alcohol, γ-phenyl-. See cinnamic alcohol.

allyl amine (2-propenylamine). $CH_2:CHCH_2NH_2$; m.w. 57.06; col. liq.; b.p. 53.2; s.w.; s.al.

allylamine, N-methyl-. $CH_2:C$ CH_2NHCH_3; m.w. 71.08; col. li b.p. 65; s.w.

allyl bromide (3-bromopropen $CH_2:CHCH_2Br$; m.w. 120.96; c liq. m.p. −119.4; b.p. 71.3; i.w.; s.

allyl bromide, α-bromo-. See prope 2, 3-dibromo-.

allyl chloride (3-chloropropen $CH_2:CHCH_2Cl$; m.w. 76.50; li m.p. −136.4; b.p. 44.6; i.w.; s.al.

allyl chloride, α-chloro-. See propene, 3-dichloro-.

allyl cyanide (3-butenenitrile; viny acetonitrile; β-butenonitrile $CH_2:CHCH_2CN$; m.w. 67.05; c liq.; b.p. 116-9; s.w.; s.al.

allylene. See propyne.

allylene, γ-bromo-. See propyne, bromo-.

allylene dichloride. See propene, 1, dichloro-.

allylene oxide. See propene, 1, epoxy-.

allyl ether (3-[2-propenoxy] propen diallyl ether). $(CH_2:CHCH_2)_2O$; m w. 98.08; liq.; b.p. 94.3; s.w.; s.al.

allyl ether, thio-. See allyl sulfide.

allyl fluoride (3-fluoropropene) $CH_2:CHCH_2F$; m.w. 60.04; gas; b.p −10; s.w.; s.al.

allyl iodide (3-iodopropene). $CH_2:CH$ CH_2I; m.w. 167.96; yel. liq.; m.p −99.3; b.p. 103.1; i.w.; s.al.

allyl isocyanide. $CH_2:CHCH_2NC$; m.w 67.05; liq.; b.p. 106; s.w.; s.al.

allyl mercaptan. See 2-propene-1-thiol

allyl mustard oil. See isothiocyanic acid, allyl ester.

allyl sulfide (3-[2-propenylthio] propene; 2-propenylsulfide; thioallyl ether; diallyl sulfide; allyl thioether). $(CH_2:CHCH_2)_2S$; m.w. 114.14; col. oil w. garlic odor; m.p. −83; b.p. *ca.* 138; s.w.; s.al.

allyl sulfocyanide. See thiocyanic acid allyl ester.

allyl thioether. See allyl sulfide.

allyltribromide. See propane, 1, 2, 3 tribromo-.

allyltrichloride. See propane, 1, 2, 3-trichloro-.

allyl trisulfide (diallyl trisulfide). $(C_3H_5)_2S_3$; m.w. 178.26; liq.; b.p. 140; i.w.; i.al.

almandite (carbuncle, Al-Fe garnet). A mineral; $Al_2O_3 \cdot FeO \cdot 3SiO_2$; cub., deep red to brnsh.-red or blk.; sp.gr. 3.688-4.33; hardness 7.0-7.5.

almond meal. The press-cake left after expressing oil from almonds; the meal from the sweet almonds is used in confectionary and for some toilet preparations.

almond oil. See oil, almond.

almond oil, French. See oil, apricot kernel.

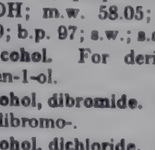
aloes. The inspissated juice or extract of the aloe, used in medicine as a cathartic.

aloin. Bitter purgative principle of aloes; $C_{20}H_{18}O_9$; m.w. 402.14; yel. need.; m.p. 147.9; s.w.; s.al.

Alox. A series of complex methyl esters of high-molecular-weight alcohols, acids and lactones used as wetting agents for metals in lubricating.

Aloxite. An artificial corundum used as an abrasive.

alpha (α). A condensed nuclei hydrocarbon with a substituted group in the 1, 4, 5, or 8 position; e.g. 1-naphthalene sulfonic acid



alpha compound. Compound in which the substituting group is in the first (or alpha) position with reference to some particular carbon atom; e.g. α-aminopropionic acid, $H_3C—\underset{NH_2}{\underset{|}{C}}H—COOH$

pha fibre. Bleached cellulose fibre containing 94% or more of α-cellulose.
pha line. Lowest frequency of a spectral series, e.g. L_α.
pha particle. Nucleus of helium atom, having a positive charge; emitted by radioactive materials.
pha ray. A stream of alpha particles emitted by a radioactive element.
pha ray spectrum. Spectrum formed by a separation of different velocity alpha particles by a magnetic or magneto-electric field.
lphasol OT. Sodium salt of alkyl ester of sulfosuccinic acid.
lsol. See aluminum acetotartrate.
istonine (chlorogenine). $C_{21}H_{20}N_2O_4 \cdot 3\frac{1}{2}H_2O$; m.w. 427.23; br. amor.; m.p. <100, 195 anh.; s.w.; s.al.
ltal. Triphenyl phosphate.
lum. Double salt composed of the sulfate of a monovalent and of a trivalent metal with 24 molecules of water of hydration, e.g. chrome alum $K_2SO_4 \cdot Cr_2(SO_4)_3 \cdot 24H_2O$.
lum. See aluminum potassium sulfate.
lum, ammonia. See aluminum ammonium sulfate (hydrated).
lum, ammonia chrome. See chromium ammonium sulfate.
lum leather. Leather made with alum in combination with salt, egg yolk and other substances.
lum, potash. See aluminum potassium sulfate.
lum, potash chrome. See chromium potassium sulfate.
lum, sodium. See aluminum sodium sulfate.
lum stone. See alunite.
Alumilite process. See Eloxal process.
alumina. See aluminum oxide.
aluminite (websterite). A mineral; $Al_2O_3 \cdot SO_3 \cdot 9H_2O$; monocl.; sp.gr. 1.66; hardness 1-2.
aluminium. British designation for aluminum (American).
aluminum. Al; m.w. 26.97; at. no. 13; valence 3; cub.; s.g. 2.702; m.p. 658.7; b.p. 1800; i.w.; a white, somewhat soft light metallic element, the most abundant metal in the earths crust, occurring as silicates in clays, feldspar, etc.; extracted chiefly from bauxite by electrolysis; used extensively in the preparation of alloys.
aluminum acetate. $Al(C_2H_3O_2)_3$; m.w. 204.04; known only in soln; d.; s.w..
aluminum acetate, basic. $Al_2O(C_2H_3O_2)_4 \cdot 4H_2O$; m.w. 378.10; wh. amor. powd.; i.w.
aluminum acetotartrate. A non-poisonous germicide used as a 50% solution.
aluminum acetylacetonate. $Al(C_5H_7O_2)_3$; m.w. 324.13; m.p. 194.
aluminum ammonium chloride. $AlCl_3 \cdot NH_4Cl$; m.w. 186.84; wh. cr.; m.p. 304; s.w.
aluminum ammonium sulfate. $Al(NH_4)(SO_4)_2$; m.w. 237.13; col. cr.; s.g. 2.039; s.w.; i.al.
aluminum ammonium sulfate (hydrated). $Al(NH_4)(SO_4)_2 \cdot 12H_2O$; m.w. 453.32; col. cub.; s.g. 1.64; m.p. 93.5; b.p. $-10H_2O$ 120, $-12H_2O$, 200; s.w.; i.al.
aluminum arsenate, ortho-. $AlAsO_4 \cdot 8H_2O$. m.w. 310.02; wh. powd.; s.g. 3.011; i.w.
aluminum benzoate. $Al(C_7H_5O_2)_3$; m.w. 390.09; wh. cr. powd.; s.w.
aluminum bromate. $Al(BrO_3)_3 \cdot 9H_2O$; m.w. 572.86; wh. cr., hyg.; m.p. 62.3; s.w.
aluminum bromide. $AlBr_3$; m.w. 266.72; trig. pl. col. s.g. 3.01 [28]; m.p. 97.5; b.p. 268; s.w.; s.al.
aluminum bromide (hydrated). $AlBr_3 \cdot 6H_2O$; m.w. 374.81; col.-yelsh. need., deliq.; s.g. 2.54; m.p. 93; s.w.; s.al.

$AlBr_3 \cdot 15H_2O$; m.w. 536.95; need. col.; m.p. −7.5; s.w.; s.al.

aluminum bronze. An alloy consisting of copper 88-96.1, aluminum 2.3-10.5, iron and tin; sp.gr. 7.50-8.19.
aluminum butoxide. $Al(OC_4H_9)_3$; m.w. 246.18 s.g. 1.0251 [25]; m.p. 101.5-102; b.p. 284.5 [10]; s.al.
aluminum carbide. Al_4C_3; m.w. 143.88; hex., yel.-grn.; s.g. 2.36.
aluminum cesium sulfate. $AlCs(SO_4)_2 \cdot 12H_2O$; m.w. 568.09; cub. col.; s.g. 1.97; m.p. 117; s.w.; i.al.
aluminum chlorate. $Al(ClO_3)_3 \cdot 6H_2O$; m.w. 385.43; rhbdr. col., deliq.; s.w.
aluminum chloride. $AlCl_3$; m.w. 133.34; hex., wh.-col., v. deliq.; s.g. 2.44 [25]; m.p. 190 [2.5 atm]; b.p. 182.7 [762]; s.w.
aluminum chloride (hydrated). $AlCl_3 \cdot 6H_2O$; m.w. 241.43; col. trig. deliq.; b.p. 182 [762]; s.w.
aluminum ethoxide (aluminum, triethoxy-). $Al(OC_2H_5)_3$; m.w. 162.09; sp.gr. 1.142 at 20/0; m.p. 134; b.p. 205 [14]; s.al.; decomposes in water.
aluminum ethyl. See aluminum, triethyl-.
aluminum ferrocyanide. $Al_4[Fe(CN)_6]_3 \cdot 17H_2O$; m.w. 1049.81; br. powd.; s.w.
aluminum fluoride. AlF_3; m.w. 83.97; tricl. col.; s.g. 3.07; m.p. 1040; s.w.; i.al.
aluminum fluoride (fluellite). $AlF_3 \cdot H_2O$; m.w. 101.99; rhomb.; s.g. 2.17; s.w.
aluminum fluoride (hydrated). $AlF_3 \cdot 3\frac{1}{2}H_2O$; m.w. 147.02; cr. powd., wh.; m.p. $-2H_2O$, 120; b.p. $-3H_2O$, 350; i.w.
aluminum fluosilicate. $Al_2(SiF_6)_3$; m.w. 480.12; wh. powd.; i.w.
aluminum formate. $Al(CHO_2)_3 \cdot 3H_2O$; wh. cryst.; m.w. 215.97; s.w.; used in waterproofing; mordant, astringent.
aluminum hydrate. See aluminum hydroxide, tri-.
aluminum hydroxide, di-. $Al_2O_3 \cdot 2H_2O$; m.w. 137.97; amor.; i.w.
aluminum hydroxide, tri- (gibbsite). $Al(OH)_3$ (or $Al_2O_3 \cdot 3H_2O$); m.w. 77.99; monocl. or amor. gel. ppt.; s.g. 2.423; m.p. $-2H_2O$ 300; i.al.
aluminum iodide. AlI_3; m.w. 407.73; wh.-br. pl.; s.g. 3.98 [25]; m.p. 191; b.p. 360; s.w.; s.al.
aluminum iodide (hydrated). $AlI_3 \cdot 6H_2O$; m.w. 515.82; wh.-yel. cr.; s.g. 2.63; b.p. 360; s.w.; s.al.
aluminum lactate. $Al(C_3H_5O_3)_3$; m.w. 294.09; wh.-yelsh. powd.; s.w.
aluminum methyl. See aluminum, trimethyl-.
aluminum naphthenate. An amber colored, rubbery plastic solid used as a bodying agent and penetration inhibitor in paints, enamels, and varnishes.
aluminum nitrate. $Al(NO_3)_3 \cdot 9H_2O$; m.w. 375.13; rhomb. col., deliq.; m.p 73; s.w.; s.al.
aluminum nitride. AlN; m.w. 40.98; rhomb. yel.; s.g. 3.05; m.p. 2200 [atm.]; s.w.
aluminum oleate. $Al(C_{18}H_{33}O_2)_3$; m.w. 870.74; wh. powd.; i.al.
aluminum oxalate. $Al_2(C_2O_4)_3 \cdot 4H_2O$; m.w. 390.00; wh. powd.; i.w.; i.al.
aluminum oxide. Al_2O_3; m.w. 101.94; hex. col.; s.g. 3.5.-.9; m.p. 2050; b.p. 2250; i.w.
aluminum oxide (corundum). Al_2O_3; m.w. 101.94; trig. wh.; s.g. 4.00; m.p. 2050; b.p. 2250; i.w.
aluminum oxide (diaspore). $Al_2O_3 \cdot H_2O$; m.w. 119.96; rhomb. col.; s.g. 3.413; i.w.
aluminum palmitate. $Al(C_{16}H_{31}O_2)_3 \cdot H_2O$; yellowish-wh. amorp. sol.; i.w.; s.alk.; a varnish and paint ingredient, waterproofs paper, textiles, leather.
aluminum phenolate. $Al(OC_6H_5)_3$; m.w. 306.09; s.g. 1.23; m.p. 265d.; s.al.
aluminum p-phenolsulfonate. $Al(C_6H_4HSO_4)_3$; m.w. 546.27; redsh. wh. powd.; s.w.; s.al.
aluminum phosphate, ortho-. $AlPO_4$; m.w. 121.99; rhomb. pl.; s.g. 2.566; m.p. >1500; i.w.; i.al.
aluminum potassium borate. $(AlO)_2K(BO_3)_3$; m.w. 253.50; cub. wh.; s.g. 3.415; m.p. <1800; i.w.
aluminum potassium sulfate (kalinite). $AlK(SO_4)_2 \cdot 12H_2O$; m.w. 474.38; cub. or monocl. col.; s.g. 1.75; m.p. 92; b.p. $-9H_2O$, 64.5; s.w.; i.al.
aluminum potassium tartrate. $KAl(C_4H_4O_6)_2$; m.w. 362.13; s.w.
aluminum propoxide. $Al(OC_3H_7)_3$; m.w. 204.13; s.g. 1.0578 [25]; m.p. .106; b.p. 268 [14]; s.al.
aluminum resinate. $Al(C_{44}H_{63}O_6)_3$; brown mass; i.w.; used as a dryer for varnishes.
aluminum rubidium sulfate. $AlRb(SO_4)_2 \cdot 12H_2O$; m.w. 520.72; cub. oct. col.; s.g. 1.867°; m.p. 99; s.w.
aluminum salicylate. $Al(C_6H_4OHCOO)_3$; m.w. 438.09; redsh. wh. powd.; i.w.; i.al.
aluminum silicate. $Al_2O_4 \cdot Si_2O_4$; m.w. 345.94; col.; s.g. 3.15; s.w.
aluminum silicofluoride. See aluminum fluosilicate.
aluminum sodium chloride. $AlCl_3 \cdot NaCl$; m.w. 191.80; wh.-yelsh. cr. powd., deliq.; m.p. 185; s.w.
aluminum sodium fluoride (cryolite). $AlF_3 \cdot 3NaF$; m.w. 209.96; monocl. col.; s.g. 2.90; m.p. 1000; s.w.
aluminum sodium sulfate. $AlNa(SO_4)_2 \cdot 12H_2O$; m.w. 458.27; cub. oct. col.; s.g. 1.675; m.p. 61; s.w.; i.al.
aluminum stearate. $Al(C_{18}H_{35}O_2)_3$; m.w. 876.79; wh.-yelsh. powd.; i.w.; s.al.
aluminum sulfate. $Al_2(SO_4)_3$; m.w. 242.12; wh. powd.; s.g. 2.71; s.w.; s.al.
aluminum sulfate (hydrated). $Al_2(SO_4)_3 \cdot 9H_2O$; m.w. 504.26; monocl. wh.; s.g. 1.705 [25]; s.w.
aluminum sulfate (alunogenite). $Al_2(SO_4)_3 \cdot 18H_2O$; m.w. 666.40; monocl. col.; s.g. 1.69 [17]; s.w.; i.al.
aluminum sulfide. Al_2S_3; m.w. 150.12; hex. yel.; s.g. 2.02 [13]; m.p. 1100.
aluminum sulfocyanide. See aluminum thiocyanate.
aluminum thallium sulfate. $AlTl(SO_4)_2 \cdot 12H_2O$; m.w. 639.67; cub. oct. col.; s.g. 2.32; m.p 91; s.w.
aluminum thiocyanate. $Al(CNS)_3$; yel. powd.; s.w.; used in mfr. of pottery; mordant in dyeing and printing textiles.
aluminum, triethoxy-. See aluminum ethoxide.
aluminum, triethyl- (aluminum ethyl). $Al(C_2H_5)_3$; m.w. 114.09; col. liq.; ign. in air; m.p. < −18; b.p. 194.
aluminum, trimethyl- (aluminum methyl). $Al(CH_3)_3$; m.w. 72.04; col. liq., ign. in air; m.p. 0; b.p. 130.
alumstone. See alunite.
alundum. Aluminum oxide, Al_2O_3, used as abrasive.
alunite (alum stone). A mineral; $K_2Al_6(OH)_{12}(SO_4)_4$; hex (trig.), col., wh., yelsh. or redsh.; sp.gr. 2.58-2.75; hardness 3.5-4.0.
alunogen. See aluminum sulfate.
alunogenite (alunogen). A mineral; $Al_2(SO_4)_3 \cdot 18H_2O$; monocl. wh., yelsh. or redsh. tricl., wh. to grnsh, blsh., yelsh., grayish to brnsh. wh.; sp.gr. 1.6-1.8; hardness 1.5-2.0; see also aluminum sulfate.
Alvar. A synthetic vinyl acetate-aldehyde resin derived from Gelva (q.v.) by hydrolysis and consequent reaction with acetaldehyde to give an acetal.
alveolar. Referring to a honeycomb structure.
amalgam. Alloy of a metal and mercury.
Amalgol. A sulfonated higher fatty alcohol used as a detergent in the textile industry.
amalic acid (tetramethylalloxantin). $C_8(CH_3)_4N_4O_7$; m.w. 324.13; cr.; s.w.; s.al.
amanitine. See choline.
amaranth. A red dyestuff of the azo group.
amaranth lake. Red pigment made by precipitating an organic dye on alumina hydrate and blanc fixe.
amarine (4, 5-dihydro-2, 4, 5-triphenyl-imidazole). $C_6H_5CH\ (C_6H_5)\ CH$ | | m.w. $NH(C_6H_5)C{:}N$ 298.16; pr.; m.p. 129; i.w.; s.al.
amaron (tetraphenylpyrazine; benzoin imide; ditolan azotide). $(C_6H_5)_2(CNC)_2(C_6H_5)_2$; m.w. 384.17; sm. need. f. acet.; m.p. 246; i.w.; s.al.
amazonite (amazonstone). A bright green variety of the potash-feldspar microcline ($KAlSi_3O_8$).
amazonstone. See amazonite.
amber (succinite). A fossil resin derived from an extinct conifer.
amber oil. See oil, amber.
ambergris. A solid, opaque, waxy, morbid secretion in the intestines of the spermaceti whale found floating on the ocean surface and in dead sperm whales; highly valued in perfumery.
Amberlac. Synthetic modified alkyd resin used in varnish.
Amberol. Synthetic tar-acid resin of modified phenolic type used in varnish.
ambipolar. Simultaneous action in two opposite directions.
amblygonite (hebronite). A mineral; $AlPO_4 \cdot LiF$; tricl. wh. to grnsh., blsh., yelsh., grayish to brnsh. wh.; sp.gr. 2.98-3.15; hardness 6.
amboceptor. A substance in blood serum, an antibody acting as a detached receptor.
Ambresit. Synthetic tar-acid resin.
ambrette. See abel moschus.
Ambridge test. Percentage degree of durability of paints on interior of steel vessels over a period of 571 days.
ambrosia oil. See oil, ambrosia.
American valerian. See cypripedium.
Ameroid. A casein resin, thermoplastic, obtainable translucent, opaque, and colored; of good machining qualities.
Ames dial. Instrument used for measuring thickness of paint films.
amethyst. A purple transparent variety of crystallised quarts (SiO_2), used as a gem-stone.
Amici prism. A combination of three triangular prisms that produces dispersion without deviation.
amicrobic. Free of microbes; not caused by bacteria.
amicron. Particle whose diameter is less than 6 mμ.
amidase. Enzyme which liberates ammonia from amino- and amido-compounds, e.g. tyrosinase.
amidation (amination). Reaction involving the introduction of the amino-group, $—NH_2$.
amide. Compound derived from carboxylic acids by replacing the hydroxyl of the —COOH group by the amino group $—NH_2$, e.g. $C_6H_5—\overset{\overset{O}{\|}}{C}—NH_2$.
amidine, benzenylnaphthyl-. See benzamidine, N-1-naphthyl-.
amidine, benzylphenylene-. See benzimidole, 2-phenyl-.
amidine, ethenyldiphenyl-. See acetamidine, N, N′-diphenyl-.
amidol. See phenol, 2, 4-diamino-dihydrochloride.
amidopyrin. See pyramidon.
amination. See amidation.
amine. Compound that may be regarded as derivative of NH_3 in which one or more of the hydrogen atoms have been replaced by hydrocarbon radicals, e.g. phenylamine, $C_6H_5NH_2$.
amine, primary. See primary amine.
amino acid. Acid containing an amino group in the alpha position to the carboxyl group, e.g. $RCH(NH_2) \cdot COOH$.
amino G acid. See 2-naphthylamine-6, 8-disulfonic acid.
aminocylase. See histozyme.
aminono ether. Nitrogen analog of alcohol, e.g. trialkylamine.
p-aminophenylmercuric acetate. See mercury (ic) acetate, p-aminophenyl-.
aminoplast. General term for synthetic resins from amino or amido compounds, e.g. urea-formaldehyde.
Amitol. An explosive containing ammonium nitrate and T.N.T. (tri-nitro-toluene).
amitosis. Nuclear division in which no spindle mechanism is present.

ammelide (6-amino-s-triazine-2, 4-diol; cyanuramide). $N:C(OH)N:C(OH)N:C(NH_2)$; m.w. 128.06; wh. cr. powd.; s.w.

ammeline (4, 6-diamino-s-triazin-2-ol; cyanurodiamide). $N:C(OH)N:C(NH_2)N:C(NH_2)$; m.w. 127.08; wh. minute need. dendritic groups; s.w.; i.al.

ammeter. Instrument used to measure the strength of the electric current in amperes.

ammine. Complex ammoniacal compound of metals in which the ammonia molecules are attached to the metals by coordinate linkages.

Ammonal. An explosive containing ammonium nitrate and powdered aluminum.

ammonate (ammonated salt). Compound analogous to hydrate wherein ammonia is present instead of water, e.g. $CaCl_2 \cdot 8NH_3$.

ammonated salt. See ammonate.

ammonation. Taking up of ammonia of crystallization; see ammonate.

ammonia. NH_3; m.w. 17.03; col. gas.; sp.gr. 0.7710°; m.p. −77.7; b.p. −33.35; s.w.; s.al.; easily liquefied; used in organic preparations and refrigeration.

ammonia alum. See aluminum ammonium sulfate (hydrated).

ammonia chrome alum. See alum, ammonia chrome.

ammonia gum (gum ammoniac). Gum-resin obtained from the juice of a Persian herb; used in medicine internally as an expectorant.

ammonia liquor (gas liquor; ammoniacal liquid). A watery solution obtained in the destructive distillation of soft coal; contains ammonia, ammonium compounds, hydrogen sulfide and cyanogen.

ammonia soap. See ammonium oleate.

ammonia meter. Instrument for testing strength of ammonia solutions; scale 0°-40°; to convert to sp.gr. multiply by 3 and subtract from 1000.

ammoniacal liquid. See ammonia liquor.

ammoniate. Any organic substance used as a source of ammonia in producing fertilizers; see ammonate.

ammonification. Splitting of complex protein, in the soil, into simpler compounds of nitrogen with ammonia or ammonium salts as the end products.

ammonioferric citrate. See iron ammonium citrate.

ammonium. The radical, NH_4^+.

ammonium acetate. $NH_4C_2H_3O_2$; m.w. 77.06; wh. cr., hyg.; sp.gr. 1.073; m.p. 114; s.w.; s.al.

ammonium amino sulfonate. $(NH_4)NH_2SO_3$; m.w. 114.12; deliq.; s.w.; i.al.

ammonium antimonate, meta-. $NH_4SbO_3 \cdot 2H_2O$; m.w. 223.83; wh. cr.; i.w.; i.al.

ammonium arsenate, dihydrogen. See ammonium arsenate, ortho-, di-hydrogen.

ammonium arsenate, ortho- di-H. $NH_4H_2AsO_4$; m.w. 158.98; tetr. col.; s.g. 2.311[9]; s.w.

ammonium arsenate, ortho- mon-H. $(NH_4)_2HAsO_4$; m.w. 176.02; monocl. col.; s.g. 1.989; s.w.

ammonium arsenite, meta-. NH_4AsO_2; m.w. 124.97; rhomb. pr. col.; s.w.; i.al.

ammonium auricyanide. See ammonium cyanaurate.

ammonium aurocyanide. See ammonium cyanaurite.

ammonium azide. NH_4N_3; m.w. 60.06; col. plates; m.p. 160; s.w.; s.al.

ammonium base, quaternary. Compound that may be regarded as derived from ammonium hydroxide by replacing the four hydrogen atoms by hydrocarbon radicals, e.g. $R_4 \cdot N \cdot OH$.

ammonium benzoate. $NH_4C_7H_5O_2$; mw. 139.08; rhomb. col.; sp.gr. 1.260; m.p. 198 d.; b.p. subl. 160; s.w.; s.al.

ammonium bimalate. $NH_4HC_4H_4O_6$; m.w. 151.08; wh. cr.; s.w.

ammonium binoxalate. See ammonium acid oxalate.

ammonium borate. $(NH_4)_2B_4O_7 \cdot 4H_2O$; m.w. 263.42; tetragonal cryst., smell of NH_3; s.w.

ammonium borate, per-, meta-. NH_4BO_3; m.w. 76.86; wh. cr.

ammonium borate, tetra- acid. $NH_4HB_4O_7 \cdot 3H_2O$; m.w. 228.37; col. cr.; s.g. 2.38-9.5; s.w.

ammonium bromate. NH_4BrO_3; m.w. 145.96; hex. col.; s.w.; s.al.

ammonium bromide. NH_4Br; m.w. 97.96; cub. col.; s.g. 2.548; b.p. 235 vac.; s.w.; s.al.

ammonium bromide, (β-acetoxyethyl) trimethyl-. See choline, o-acetylbromide.

ammonium bromide, ethyl-. See ethylamine, hydrobromide.

ammonium bromide, tetraethyl-. $(C_2H_5)_4NBr$; m.w. 210.06; cr. f.al.; s.al.

ammonium bromoplatinate. $(NH_4)_2PtBr_6$; m.w. 710.80; cub. red.-br.; s.g. 4.26[24].

ammonium bromoselenate. $(NH_4)_2SeBr_6$; m.w. 594.77; cub. red.; s.g. 3.326.

ammonium bromostannate. $(NH_4)_2SnBr_6$; m.w. 634.27; cub. col.; s.g. 3.50; s.w.

ammonium carbamate. $NH_4CO_2NH_2$; m.w. 78.06; rhomb. col.; s.w.; s.al.

ammonium carbonate. $(NH_4)_2CO_3 \cdot H_2O$; m.w. 114.09; cub. col.; s.w.; i.al.

ammonium carbonate, acid (bicarb.). NH_4HCO_3; m.w. 79.05; rhomb. or monocl. col.; s.g. 1.58; s.w.; i.al.

ammonium carbonate, bi-. See ammonium carbonate, acid.

ammonium carbonate sesqui-. $(NH_4)_4H_2(CO_3)_3 \cdot H_2O$; m.w. 272.19; rhomb. pr.; s.w.; s.al.

ammonium chlorate. NH_4ClO_3; m.w. 101.50; monocl. need. col.; s.w.; s.al.

ammonium chlorate, per-. NH_4ClO_4; m.w. 117.50; rhomb. col.; s.g. 1.95; s.w.; s.al.

ammonium chloride (sal ammoniac). NH_4Cl; m.w. 53.50; cubic, col.; s.g. 1.536; s.w.

ammonium chloride, derivatives of. See also "hydrochloride" under the various amines.

ammonium chloride, tetramethyl-. $(CH_3)_4NCl$; m.w. 109.56; col. cr.; s.w.; s.al.

ammonium chloroaurate. NH_4AuCl_4; m.w. 357.07; rhomb. or monocl. yel.; s.w.; s.al.

ammonium chloroaurate (hydrated). $(NH_4AuCl_4)_4 \cdot 5H_2O$; m.w. 1518.35; monocl. yel.; m.p. $-5H_2O$ 100; s.w.; s.al.

ammonium chlorogallate. NH_4GaCl_4; m.w. 229.59; wh. cr.; m.p. 275; s.w.; s.al.

ammonium chloroiridate. $(NH_4)IrCl_6$; m.w. 441.92; cub. red.-blk.; s.g. 2.856; i.al.

ammonium chloropalladate. $(NH_4)_2PdCl_6$; m.w. 355.52; cub. red.-br.; s.g. 2.418; s.w.

ammonium chloropalladite. $(NH_4)_2PdCl_4$; m.w. 284.61; tetr. olive grn.; s.g. 217; s.w.; i.al.

ammonium chloroplatinate. $(NH_4)_2PtCl_6$; m.w. 444.05; cub. yel.; s.g. 3.065.

ammonium chloroplatinite. $(NH_4)_2PtCl_4$; m.w. 373.14; rhomb. red (tetr.); s.g. 2.936; s.w.; i.al.

ammonium chloroplumbate. $(NH_4)_2PbCl_6$; m.w. 456.04; cub. yel.; s.g. 2.925; s.w.

ammonium chlorostannate. $(NH_4)_2SnCl_6$; m.w. 367.52; cub. wh.; s.g. 2.4; s.w.

ammonium chromate. $(NH_4)_2CrO_4$; m.w. 152.09; monocl. yel.; s.g. 1.91[12]; s.w.; i.al.

ammonium chromate, bi-. See ammonium chromate, di-.

ammonium chromate, di-. $(NH_4)_2Cr_2O_7$; m.w. 252.10; monocl. orange; s.g. 215 [25]; s.w.; s.al.

ammonium chromate, per-. $(NH_4)_3CrO_8$; m.w. 234.13; cub. red.-br.; s.w.; i.al.

ammonium citrate. See ammonium tricitrate.

ammonium compound, quaternary. Addition product that a tertiary amine forms with an alkyl halide, e.g. $\left[\begin{matrix}C_2H_5 \\ C_2H_5\end{matrix}\!\!>\!N\!<\!\!\begin{matrix}C_2H_5 \\ C_2H_5\end{matrix}\right] I$.

ammonium cyanate. NH_4CNO; m.w. 60.05; wh. cryst.; s.w.; s.al.

ammonium cyanaurate (auricyanide). $NH_4Au(CN)_4 \cdot H_2O$; m.w. 337.29; col. pl.; s.w.; s.al.

ammonium cyanaurite (aurocyanide). $NH_4Au(CN)_2$; m.w. 267.26; cub. col.; s.w.; s.al.

ammonium cyanide. NH_4CN; m.w. 44.05; cub. col.; d. 1.02 [100] g/l; s.w.; s.al.

ammonium ethyl sulfate. $NH_4C_2H_5SO_4$ m.w. 143.14; col. to sl. yelsh. hyg. cr.; m.p. 99; s.w.

ammonium ferricyanide. $(NH_4)_3Fe(CN)_6$; m.w. 266.01; red. cryst.; s.w.

ammonium ferrocyanide. $(NH_4)_4Fe(CN)_6$; m.w. 284.04; monocl. yel., turns bl. in air; s.w.; s.al.

ammonium fluoborate (borofluoride). NH_4BF_4; m.w. 104.86; hex. prisms.; s.g. 1.851 [17]; s.w.; s.al.

ammonium fluoride. NH_4F; m.w. 37.04; hex. col., deliq.; s.w.; s.al.

ammonium fluoride, acid (bifluoride). NH_4HF_2; m.w. 57.05; rhomb. or tetr.; deliq.; s.g. 1.21 ½; s.w.; s.al.

ammonium fluoride, bi-. See ammonium fluoride, acid.

ammonium fluosilicate (cryptohalite). $(NH_4)_2SiF_6$; m.w. 178.14; cubic or hex., col.; s.g. 2.01; s.w.; s.al.

ammonium fluotitanate. $(NH_4)_2TiF_6$; m.w. 197.98; hex. prisms; s.w.; i.al.

ammonium formate. NH_4CHO_2; m.w. 63.05 monocl. wh., deliq.; s.g. 1.266; m.p. 116; b.p. d. 180; s.w.; s.al.

ammonium hydrosulfide. NH_4SH; m.w. 51.11; rhomb. wh.; s.w.; s.al.

ammonium hydroxide. NH_4OH; m.w. 35.05; in soln. only at ord. temp.; m.p. −77; s.w.

ammonium hydroxide, tetraethyl-. $(C_2H_5)_4NOH$; m.w. 147.17; deliq. need.; s.w.; s.al.

ammonium hydroxide, tetramethyl-. $(CH_3)_4NOH \cdot 5H_2O$; m.w. 181.19; hyg. need.; m.p. anh. 63; s.w.; s.al.

ammonium hydroxide, trimethyl-. See betaine.

ammonium hydroxide, trimethylvinyl-. See neurine.

ammonium ichthyol sulfonate (ichthyol). A pharmaceutical product obtained by sulfonating tars from fossilized fish remains which have been destructively distilled.

ammonium iodate. NH_4IO_3; m.w. 208.96; tetr. col.; s.g. 3.309 [21]; s.w.

ammonium iodate, per-. NH_4IO_4; m.w. 208.96; tetr. col.; s.g. 3.056 [15].

ammonium iodide. NH_4I; m.w. 144.96; cub. col.; s.g. 2.563; b.p. 220 vac.; s.w.; s.al.

ammonium lactate. $NH_4C_3H_5O_3$; m.w. 107.08; col.-yelsh. syrupy liq.; s.g. 1.19-.21 [15] s.w.; s.al.

ammonium laurate, anhydrous. $C_{11}H_{23}COONH_4$; a soft waxlike material; m.p. 42-48; an emulsifying agent for oil in water emulsions.

ammonium linoleate. $NH_4C_{17}H_{31}CO_2$; a cream paste used as detergent, emulsifying agent, and surface tension reducer.

ammonium l-malate. $NH_4C_4H_5O_5$; m.w. 151.08; rhomb. col.; s.g. 1.5; m.p. 161; s.w.

ammonium malate, bi-. See ammonium bimalate.

ammonium manganate, per-. NH_4MnO_4; m.w. 136.97; rhomb.; s.g. 2.208.

ammonium molybdate. $(NH_4)_2MoO_4$; m.w. 196.08; monocl. pr., col.; s.g. 2.27; i.al.

ammonium molybdate, commercial. See ammonium molybdate, para-.

ammonium molybdate, para- (com'l ammonium molybdate). Formula; variable; monocl. col.-yelsh.; s.g. 2.498; s.w.

ammonium naphthenate. A tan paste used as a detergent and emulsifying agent.

ammonium nitrate. NH_4NO_3; m.w. 80.05; rhomb. col.; s.g. 1.725 [25]; m.p. 169.6; s.w.

ammonium nitrite. NH_4NO_2; m.w. 64.05; wh.-yelsh. cr.; m.w. 1.69; s.w.; s.al.

ammonium oleate (ammonia soap). $NH_4C_{18}H_{33}O_2$; m.w. 299.30; yel. to brown. paste; s.al.; a detergent solidifying alcohol.

ammonium oleate, amyl-. $C_5H_{11}NH_3 \cdot C_{18}H_{34}O_2$; m.w. 369.38; yel.; decomposes on heating.

ammonium oxalate. $(NH_4)_2C_2O_4 \cdot H_2O$; m.w. 142.09; rhomb. col.; s.g. 1.50; s.w.

ammonium oxalate, acid (binoxalate). $NH_4HC_2O_4 \cdot H_2O$; m.w. 125.06; rhomb. col.; s.g. 1.566; s.w.

ammonium palmitate. $NH_4 \cdot C_{16}H_{31}O_2 \cdot C_{16}H_{32}O_2$; m.w. 529.63 yelsh. soapy mass or yel. powd.; i.w.; s.al.

ammonium phenolsulfonate. $C_6H_5OHSO_3 \cdot NH_4$; m.w. 191.14; wh. cr.; s.w.

ammonium phosphate, di-. See ammonium phosphate, ortho-, mon-H.

ammonium phosphate, dihydrogen. See ammonium phosphate, ortho-, di-H.

ammonium phosphate, hypo-. $(NH_4)_2H_2P_2O_6$; m.w. 196.13; m.p. 170.

ammonium phosphate, mono-. See ammonium phosphate, ortho-, di-H.

ammonium phosphate, ortho-, di-H. $NH_4H_2PO_4$; m.w. 115.07; tetr. col.; s.g. 1.803 [19]; s.w.

ammonium phosphate, ortho-, mon-H. $(NH_4)_2HPO_4$; m.w. 132.11; monocl. col.; s.g. 1.619; s.w.; i.al.

ammonium phosphate, tri-. $(NH_4)_3PO_4 \cdot 3H_2O$; m.w. 203.18; semi-solid, cryst. masses or short prismatic needles; s.w.; used as fertilizer, fireproofing textiles and wood, and in medicine.

ammonium phosphite, dihydrogen. See ammonium phosphite, ortho-, di-H.

ammonium phosphite, hypo-. $NH_4H_2PO_2$; m.w. 83.07; rhomb. tabl.; s.g. 2.515; m.p. 200; s.w.; s.al.

ammonium phosphite, ortho-, di-H. $NH_4H_2PO_3$; m.w. 99.07; monocl. prisms col.; m.p. 123; s.w.; i.al.

ammonium phosphomolybdate. $(NH_4)_3PO_4 \cdot 12MoO_3 \cdot 3H_2O$(?); m.w. 1931.18; yel. powd.; s.w.; i.al.

ammonium phosphotungstate. $2(NH_4)_3PO_4 \cdot 24WO_3 \cdot XH_2O$; a white powd.; s.w.; chemical reagent.

ammonium picramate. $NH_4 \cdot O \cdot (NO_2)_2NH_2 \cdot C_6H_2$; m.w. 216.09; redsh.-br. cr. powd.; s.w.; s.al.

ammonium picrate. $NH_4C_6H_2O_7N_3$; m.w. 246.08; rhomb. red. or yel.; s.g. 1.719 b.p. exp. 423; s.w.; s.al.

ammonium platinocyanide. $(NH_4)_2Pt(CN)_4 \cdot H_2O$; m.w. 353.36; yel. cr.; s.w.

ammonium purpurate. See murexide.

ammonium ricinoleate. $C_{17}H_{32}COONH_4$; a white paste used as a detergent and emulsifying agent.

ammonium salicylate. $NH_4C_7H_5O_3$; m.w. 155.08; monocl. col.; s.w.; s.al.

ammonium selenate. $(NH_4)_2SeO_4$; m.w. 179.28; monocl. col.; s.g. 2.194; s.w.; i.al.

ammonium selenide. $(NH_4)_2Se$; m.w. 115.28; br.; s.w.

ammonium silicofluoride. See ammonium fluosilicate.

ammonium stearate. $NH_4C_{18}H_{35}O_2$; m.

w. 301.31; wh. paste; m.p. 87; s.w.; i.al.; waterproofing agent for concrete, cement.

ammonium stearate, anhydrous. $C_{17}H_{35}COONH_4$; m.w. 301; m.p. 74-76; s.w.; i.al.; used in waterproofing of cements and concretes; cosmetics.

ammonium succinate. $NH_4COO \cdot CH_2 \cdot CH_2 \cdot COONH_4$; m.w. 152.11; col. cr.; s.w.; s.al.

ammonium sulfamate. $NH_4OSO_2NH_2$; a white crystalline solid, extremely soluble in water; used for flameproofing textiles and for certain grades of paper.

ammonium sulfate (mascagnite). $(NH_4)_2SO_4$; m.w. 132.14; rhomb. col.; s.g. 1.769; s.w.; i.al.

ammonium sulfate, acid (bisulfate). NH_4HSO_4; m.w. 115.11; rhomb.; s.g. 1.78; m.p. 146.9; s.w.; s.al.

ammonium sulfate, bi-. See ammonium sulfate, acid.

ammonium sulfate, per-. $(NH_4)_2S_2O_8$; m.w. 228.20; monocl. col.; s.g. 1.982; s.w.

ammonium sulfide. See ammonium sulfide, mono-.

ammonium sulfide, mono-. $(NH_4)_2S$; m.w. 68.14; col.-yel. cr., hyg.; s.w.; s.al.

ammonium sulfite. $(NH_4)_2SO_3 \cdot H_2O$; m.w. 134.15; monocl. col.; s.g. 1.41 [25]; s.w.; s.al.

ammonium sulfite, acid (bisulfite). NH_4HSO_3; m.w. 99.11; hex. pr.; s.w.

ammonium sulfite, bi-. See ammonium sulfite, acid.

ammonium sulfocyanide. See ammonium thiocyanate.

ammonium tartrate (dl). $(NH_4)_2C_4H_4O_6$ m.w. 184.11; monocl. col.; s.g. 1.601; s.w.; s.al.

ammonium tartrate, acid (dl). $NH_4HC_4H_4O_6$; m.w. 167.08; monocl. pr. col.; s.g. 1.636; s.w.; i.al.

ammonium tartrate, bi-. See ammonium tartrate, acid.

ammonium tellurate. $(NH_4)_2TeO_4$; m.w. 227.58; wh. powd.; s.g. 3.01 [25]; s.w.; i.al.

ammonium thioantimonate. $(NH_4)_3SbS_4 \cdot 4H_2O$; m.w. 376.18; yel. pr.; s.w.; i.al.

ammonium, thiocarbonate, tri-. $(NH_4)_2CS_3$; m.w. 144.26; yel. cr.; s.w.; s.al.

ammonium thiocyanate. NH_4CNS; m.w. 76.11; monocl. col., deliq.; s.g. 1.305; m.p. 149.6; s.w.; s.al.

ammonium thionate, di-. $(NH_4)_2S_2O_6 \cdot \frac{1}{2}H_2O$; m.w. 205.21; monocl.; s.g. 1.704; s.w.; i.al.

ammonium thiosulfate. $(NH_4)_2S_2O_3$; m.w. 148.20; monocl. col.; s.w.; i.al.

ammonium tricitrate (tert.). $(NH_4)_3C_6H_5O_7$; m.w. 243.16; wh. cr., deliq.; s.w.; i.al.

ammonium tungstate, poly-. $x(NH_4)_2O \cdot y(WO_3) \cdot zH_2O$; wh.cr.; s.w.; i.al.

ammonium undecylenate. $C_{10}H_{21}COONH_4$; br. paste used as detergent, emulsifying agent, drier.

ammonium valerate. $NH_4C_5H_9O_4$; m.w. 151.11; col. or wh. cr.; disg. odor; s.w.; s.al.

ammonium vanadate, meta-. NH_4VO_3; m.w. 116.99; col. cr., wh.-ylsh.; s.g. 2.326; i.al.

ammono acid. Nitrogen compound corresponding to analog in which the nitrogen is replaced by oxygen, e.g. H_2NCN.

ammono alcohol. Nitrogen analog of alcohol, e.g. mono-alkylamine.

ammono base. Base of the nitrogen system, considered as derivative of NH_3, e.g. KNH_2.

ammono basic salt. Salt formed when a certain salt is hydrolyzed in liquid ammonia, e.g. ammono basic mercuric chloride, $H_2N\text{-}Hg\text{-}Cl$.

ammono ester. Ester of ammono acid, e.g. methyl cyanamide.

ammono salt. Nitrogen salt which may be regarded as a derivative of ammonia corresponding to the analog in which the nitrogen is replaced by oxygen, e.g. $C_6H_5C(NH)NHK$.

ammonolysis. Process of conversion of an organic compound to an amide by means of ammonia; analogous to hydrolysis but with substitution of ammonia for water.

Ammoplaste. Synthetic tar-acid resin.

amoeba. A one-celled animal, moving and injesting food by allowing its protoplasm to flow within it in a desired direction.

Amonton's law. The coefficient of friction is independent of the intensity of pressure and of speed.

amorphous. Devoid of crystalline structure; a rare condition, x-ray examination showing microcrystallity for many apparently amorphous substances.

amosite. A variety of asbestos, $(OH)_2(Fe,Ca,Mg)_7(Si,Al)_8O_{22}$.

ampere. Unit of electric current; 1 coulomb flowing for one second; .1 abamperes; the current flowing at a potential of one volt against a resistance of one ohm.

ampere, absolute. Electrical unit = 1.00007 international amperes (a).

ampere-hour, absolute. Measure of electric quantity 3600 coulombs (absolute).

ampere rule. The direction of a magnetic field about a wire conducting a current is clock wise when observed by looking in the direction of the current.

ampere turn. Magnetomotive force produced by a current of 1 ampere in 1 turn of wire; 1.2566 gilberts.

amperian current. Current flowing in an atom or molecule, without resistance, producing a magnetic moment.

amphibole. See hornblende.

amphigene. See leucite.

amphiprotic. See amphoteric.

amphitrichous. Flagella at each end of a cell.

ampholyte (amphoteric electrolyte). Substance which can act simultaneously as an acid or base because it can both lose or gain a proton, e.g. H_2O forming OH^- or H_3O^+.

amphoteric. Possessing both pronounced basic and acid properties; in more modern terms an amphoteric element is one which may form negative hydroxo ions as well as positive aquo ions by yielding or gaining protons.

amphoteric electrolyte. See ampholyte.

ampipathic. Ion having an unsymmetrical duality of affinity, one end attracting water and the other repelling water.

amplitude. Maximum value of the displacement in an oscillatory motion.

amygdalic acid (amygdalinic acid; mandelic acid gentiobioside). $C_{19}H_{27}O_{11} \cdot COOH$; m.w. 476.22; col. cr.; m.p. 118; s.w.; i.al.

amygdalin (mandelonitrile gentiobioside; amygdaloside). $C_{20}H_{27}NO_{11}$; m.w. 457.22; rhomb. f.w.; m.p. 214-6; s.w.; s.al.

amygdalinic acid. See amygdalic acid.

amygdaloside. See amygdalin.

amylaceous. Pertaining to starch; starchy.

pri-act-amyl alcohol. See 1-butanol 2-methyl-.

pri-n-amyl alcohol. See 1-pentanol.

sec-act-amyl alcohol. See 2-pentanol.

tert-amyl alcohol. See 2-butanol, 2-methyl-.

n-amyl aldehyde. See valeraldehyde.

amylamine (n-amylamine; pentylamine; 1-aminopentane). $CH_3(CH_2)_4NH_2$; m.w. 87.11; col. liq.; m.p. −55; b.p. 104; s.w.; s.al.

sec-n-amylamine. See butylamine (n), α-methyl-.

tert-amylamine ([α, α-dimethylpropyl] amine; dimethylethylcarbinylamine). $CH_3CH_2C(CH_3)_2NH_2$; m.w. 87.11; col. liq.; m.p. −105; b.p. 78.5; s.w.; s.al.

amylamine, amyl chloro-. (mixed isomers). $ClC_5H_{10}NHC_5H_{11}$; m.w. 191.62; brown; decomposes on heating.

amylamine, diethanol-. $C_5H_{11}N(CH_2CH_2OH)_2$; m.w. 175.24; lt. amber; sp.gr. 0.961 [20]; b.p. 170-180 [22].

amylamine, α-methyl- (2-aminohexane). $CH_3(CH_2)_3CH(CH_3)NH_2$; m.w. 101.13; m.p. −19; b.p. 130 [742].

amylamine, 4-methyl-. See isohexylamine.

amyl ammonium oleate. See ammonium oleate, amyl-.

amylase (diastase). Enzyme that hydrolyzes starch.

amyl benzoate. See benzoic acid, amyl ester.

amyl bromide (1-bromopentane; n-amyl bromide). $CH_3(CH_2)_3CH_2Br$; m.w. 151.00; col. liq.; m.p. −88.0; b.p. 128-9 [740]; i.w.; s.al.

pri-act-amyl bromide. See butane, 1-bromo-2-methyl-.

amyl butyrate. See butyric acid, amyl ester.

n-amyl carbylamine. See amyl isocyanide.

amyl chloride (1-chloropentane; n-amyl chloride). $CH_3(CH_2)_3CH_2Cl$; m.w. 106.54; col. liq.; m.p. −99; b.p. 108.2; i.w.; s.al.

pri-act-amyl chloride. See butane, 1-chloro-2-methyl-.

tert-amyl chloride. See butane, 2-chloro-2-methyl-.

amyl chloronaphthalene. See naphthalene, amyl chloro-.

amyl cinnamic aldehyde. A synthetic perfume having the odor of jasmine.

n-amyl cyanide. See capronitrile.

amyl diethanol amine. See amylamine, diethanol-.

α-n-amylene. See 1-pentene.

β-n-amylene. See 2-pentene.

amylene dichloride. $C_5H_{10}Cl_2$; liq.; sp.gr. 1.22; b.p. 145; general solvent and solvent in nitrocellulose, varnishes, lacquers, and plastics.

α-n-amylene glycol. See 1, 2-pentanediol.

β-n-amylene glycol. See 2, 3-pentanediol.

amyl ether (pentyloxy pentane; di-n-amyl ether). $[CH_3(CH_2)_3CH_2]_2O$; m.w. 158.17; ylsh. liq.; m.p. −69.3; b.p. 190; i.w.; s.al.

amylin. See dextrin.

amyl iodide (1-iodopentane; n-amyl iodide). $CH_3(CH_2)_3CH_2I$; m.w. 198.01; col. liq. m.p. −85.6; b.p. 156; i.w.; s.al.

pri-act-amyl iodide. See butane, 1-iodo-2-methyl-.

tert-amyl iodide. See butane, 2-iodo-2-methyl-.

amyl isocyanide (n-amylcarbylamine). $CH_3(CH_2)_4NC$; m.w. 97.09; liq.; m.p. −51.1; b.p. 155.5; i.w.; s.al.

amyl lactate. See lactic acid, amyl ester.

amyl laurate. See lauric acid, amyl ester.

amyl levulinate. See levulinic acid, amyl ester.

amyl mercaptan. See 1-pentanethiol.

pri-act-amyl mercaptan. See 1-butanethiol, 2-methyl-.

tert-amyl mercaptan. See 2-butanethiol, 2-methyl-.

n-amyl mustard oil. See isothiocyanic acid, amyl ester.

amyl nitrate. $C_5H_{11}ONO_2$; m.w. 133.09; water-white; sp.gr. 1.000 [20]; b.p. 145-156.

amyl nitrite(n) (pentyl nitrite). $CH_3(CH_2)_4NO_2$; m.w. 117.09; pa. yel. liq.; b.p. 104; s.w.; s.al.; valuable heart stimulant and is used in medicine for treatment of angina pectoris.

Amylo process. Utilisation of certain molds producing an enzyme that hydrolyzes starch to simpler sugars which are used in making ethyl alcohol.

amyloclastic. See amylolytic.

amylodextrin. See soluble starch.

amyloid. Gelatinous hydrate produced by diluting a solution of concentrated sulfuric acid and cellulose with water.

amyl oleate. See oleic acid, emyl ester.

amylolytic (amyloclastic). Starch digesting enzyme, e.g. amylase.

amylopsin. Pancreative amylase; a powerful digestant of starch.

p-tertiary amyl phenol. See phenol, p-tert-amyl-.

p-tert-amyl phenyl acetate. See phenol, p-tert-amyl-, acetate.

amyl phosphate, mono-. $C_5H_{11} \cdot H_2PO_4$; syrupy liq.; b.p. decomp.; s.w.; uses: in solvents, plasticizers.

amyl salicylate. See salicylic acid, amyl ester.

amyl silicate. $(C_5H_{11})_4SiO_4$; m.w. 376.40; water-white; sp.gr. 0.939 [20]; b.p. 200-275 [3mm].

n-amyl stearamide. A cream-colored wax; m.p. 52-53.

amyl sulfate (di-n-amyl sulfate; pentyl sulfate). $[CH_3(CH_2)_4]_2SO_4$; m.w. 238.23; b.p. 117.0 [2.5].

amylum. See starch.

amytal. See barbituric acid, 5-ethyl-5-isoamyl-.

anabaena. Green algae forming scum on stagnant fresh water.

l-anabasine (1-2-[3-pyridyl] piperidine). $C_{10}H_{14}N_2$; m.w. 162.13; col. liq.; b.p. 28.09; s.w.; s.al.

anabatic. Convective air currents.

anabolism. Constructive function of living cells; conversion of lifeless into living matter.

anacardic acid. $C_{22}H_{32}O_3$; m.w. 344.25; cr.; m.p. 26; i.w.; s.al.

anaerobic. Class of bacteria which are inhibited or killed by free atmospheric oxygen.

anaesthesin. See benzocaine.

anaglyph. Two differently colored stereoscopic images placed on top of each other.

anahedron. Non-crystalline mineral component of igneous rock.

analcime. See analcite.

analcite (analcime). A mineral; $Na_2O \cdot Al_2O_3 \cdot 4SiO_2 \cdot 2H_2O$; cub. col. or wh., yelsh, redsh or grnsh.; sp.gr. 2.22-2.29; hardness 5.0-5.5.

analgen (1) (5-benzamido-8-ethoxy-quinoline; quinalgen; chinalgen; labordin; benzanalgen). $C_9H_5N(NHCOC_6H_5)O\text{-}C_2H_5$; m.w. 292.14; col.-yel. need.; m.p. 210; i.w.; s.al.

analgesic (anodyne). Drug which relieves pain.

analgesine. See antipyrine.

analysis. The determination of the chemical identity or composition of a mixture or compound; the separation of substance into its simpler constituents.

analysis, proximate. Determination, by specified methods, of moisture, volatile matter, fixed carbon and ash of coal or coke.

analysis, qualitative. See qualitative analysis.

analysis quantitative. See quantitative analysis.

analysis, spectrum. See spectrum analysis.

analyzer. Device for detecting and determining properties of polarized light.

anammonide, acid. Anhydride of an ammono acid, e.g. carbonic nitride (C_2N_4); nitrogen analog of acid anhydride.

anamorphism. Constructive changes in rocks.

anaphase. Stage of mitosis, when chromosomes move from central region of spindle toward the poles; follows the metaphase and precedes the telophase.

anaphrodisiac. Substance which diminishes sexual desire and function.

anaphylaxis. An abnormal sensitivity of a person to a foreign protein, e.g. pollen, foods, bacteria, cosmetics; can be artificially produced in an organism which reacts at a later time to the same protein; see allergy.

anastase. See titanium dioxide.

anastomosis. A union of hollow organs or cells.

anatase (octahedrite). A mineral; TiO_2; tetr., br., bl., blk.; sp.gr. 3.82-3.95;

hardness 5.5-6.0; see also titanium, oxide, di-.

anatexis. Refusion of igneous rock.

anazol. Ethyl phthalate.

-ance. Suffix denoting quantities depending not only on the material but also on size and shape (total quantities), e.g. conductance.

-ane. Suffix denoting saturated hydrocarbons, e.g. propane.

andalusite. A mineral; $Al_2O_3 \cdot SiO_2$; rhomb. gray, redsh., grnsh., blk.; sp.gr. 3.1-3.2; hardness 7.0-7.5.

andesine. A mineral of the feldspar group; $(CaO, Na_2O)Al_2O_3 \cdot 4SiO_2$; tricl., wh., gray, grnsh., yelsh., flesh red; sp.gr. 2.647-2.69; hardness 5-6.

Andrade's theory. Viscosity is the consequence of transportation of momentum in collisions of molecules.

andradite (common garnet, black garnet). A mineral; $3CaO \cdot Fe_2O_3 \cdot 3SiO_2$; cub., brnsh. red. br., blk., also yel. or grn.; sp.gr. 3.64-3.9; hardness 6.5-7.0.

anemometer. Device for measuring velocity of wind.

anemophilous. Flowers fertilized by wind carried pollen.

anethole (p-propenylanisole; anise camphor; 1-methoxy-4-propenyl benzene). $CH_3CH:CHC_6H_4OCH_3$; m.w. 148.09; col. leaf. f.al.; m.p. 22.5; b.p. 235.3.; s.w.; s.al.

anethol, hydroxy methyl. See propenyl guaethol.

aneuploid. Organism in whose somatic chromosome set one or more chromosomes are represented more often than the rest.

angelica (Archangelica officinalis). A plant useful for flavoring purposes. The root contains angelic acid.

angelic acid (cis-2-methyl-2-butenoic acid; α-methyl isocrotonic acid). $CH_3CH:C(CH_3)COOH$; m.w. 100.06; col. monocl. pr.; m.p. 45; b.p. 185; s.w.; s.al.

angelica oil. See oil, angelica.

angle. Ratio between the arc and the radius of the arc.

angle, central. Angle whose vertex is at center and whose sides are radii of the circle.

angle of contact. Angle between a drop of liquid in equilibrum with the surface of a solid.

angle of friction. Angle whose tangent is the friction coefficient.

angle of incidence. Angle formed by a ray of light approaching a surface with the plane of the surface.

angle of lag. Angular difference in phase between two vibrations or sets of waves.

angle of refraction. Angle formed by a light ray with plane of the surface after refraction at surface between two transparent substances.

angle of repose. Angle of inclination of a surface of loosely piled material in equilibrium with gravity.

angle of slip. Angle between surfaces of slip or shear and direction of stress during flow or plastic deformation of a solid.

angle, reflex. An angle greater than 180° and less than 360°.

angles, suppiementary. Two angles whose sum is 180°.

anglesite. A mineral; $PbSO_4$; rhomb. or monocl., wh., gray, yel., bl., grn., (col.); sp.gr. 6.12-6.39; hardness 2.75-3.0; see also lead sulfate.

angostura bark (cusparia bark). Bark of a Brazilian tree used in medicine as a tonic for dyspepsia, diarrhoea, and dysentery.

angstrom unit (Å). Measure of wave lengths of electromagnetic rfdiations equal to 10^{-7} millimeters.

angular acceleration. Time rate of change of angular velocity either in angular speed or in the direction of the axis of rotation.

angular aperture. The largest angular extent of wave surface which an objective can transmit.

angular harmonic motion or harmonic motion of rotation. Periodic, oscillatory angular motion in which the restoring torque is proportional to the angular displacement.

angular impulse. Time integral of a torque.

angular momentum or moment of momentum. Quantity of angular motion measured by the product of the angular velocity and the moment of inertia.

angular velocity. Time rate of angular motion about an axis.

anhalonine (1, 2, 3, 4-tetrahydro-6-methoxy-1-methyl-7, 8-methylene dioxyisoquinoline). $C_{12}H_{16}NO_3$; m.w. 221.13; need.; m.p. 85; s.w.; s.al.

anhalonidine. $C_{12}H_{17}NO_3$; m.w. 223.14; m.p. 160; s.w.; s.al.

anhalonine, hydrochloride. $C_{12}H_{16}NO_3 \cdot HCl$; m.w. 257.59; wh. cr. powd.; s.w.; s.al.

anhydrite. A mineral; $CaSO_4$; rhomb. or monocl., col., wh., gray, bl., br. or redsh.; sp. gr. 2.899-2.985; hardness 3.0-3.5; used as a drying agent.

dl-anhydroecgonine (ecgonidine). $C_9H_{13}NO_3$; m.w. 167.11; wh. cr. f.w.; s.w.; s.al.

dl-anhydroecgonine, hydrochloride. $C_9H_{13}NO_3 \cdot HCl$; m.w. 203.57; rhomb. need. f.al.; m.p. 240-1; s.w.; s.al.

anhydroformaldehyde aniline. See s-triazine, hexahydro-1, 3, 5-triphenyl-.

Anhydrone. Magnesium perchlorate, $Mg(ClO_4)_2$; used as a drying agent.

anhydrose type. Classification of polysaccharides containing a combination of two monosaccharide residues forming a nonreducing non-saccharide; e.g. anhydro glucose.

anhydrous. Without water.

anhysteric. Without hysteresis.

anilide. N-acyl derivative of aniline; e.g. $C_6H_5\text{-}\overset{H}{N}\text{-}\overset{O}{\overset{\|}{C}}\text{-}CH_3$.

aniline (phenylamine; aminobenzene). $C_6H_5NH_2$; m.w. 93.06; col. oily liq.; m.p. −6.2; b.p. 184.4; s.w.; s.al.

aniline color. See aniline dye.

aniline dye (aniline color). Organic color derived from coal tar and its derivatives used for dyeing and coloring.

aniline oil. See aniline.

aniline point. Lowest temperature at which equal volumes of freshly distilled aniline and oil being tested are completely miscible.

aniline salt. See aniline hydrochloride.

o-aniline, acetyl-. See acetophenone, o-amino-.

aniline, n-acetyl-. See acetanilide, and the corresponding derivatives.

aniline, N-allyl- (N-[2-propenyl] aniline). $CH_2:CHCH_2NHC_6H_5$; m.w. 133.09; yel. oil; b.p. 217-8 [735]; s.w.; s.al.

aniline, o-, m-, or p- amino-. See o-, m-, or p- phenylenediamine.

aniline, N-amyl- (mixed isomers). $C_6H_5NHC_5H_{11}$; m.w. 163.14; amber; sp.gr. 0.916 [20]; b.p. 245-60.

aniline, azodi-. See azobenzene, diamino-.

aniline, n-benzal- (benzylidene aniline). $C_6H_5CH:NC_6H_5$; m.w. 181.09; yel. need. f. CS_2; m.p. 54; b.p. 300; i.w.; s.al.

aniline, p, p'-benzalbis-N, N-dimethyl- (4, 4'-bisdimethylaminotriphenyl methane; leuco malachite green). $C_6H_5CH[C_6H_4N(CH_3)_2]_2$; m.w. 330.22; monocl. need. f.bz.; m.p. 93; i.w.; s.al.

aniline, p, p'-benzaldi-. See methane, p, p'-diaminotriphenyl-.

aniline, N-benzal-p-hydroxy-. See phenol, p-(benzalamino)-.

aniline, m-benzohydryl- (m-aminotriphenylmethane; m-aminotritan). $(C_6H_5)_2CHC_6H_4NH_2$; m.w. 259.14; need. f.et.; m.p. 120.

aniline, p-benzohydryl- (p-aminotriphenylmethane). $(C_6H_5)_2CHC_6H_4NH_2$; m.w. 259.14; pr. f.et.; m.p. 84; b.p. 248 [12]; i.w.

aniline, o, m or p-benzoyl-. See benzophenone, amino-.

aniline, N-benzoyl-. See benzanilide.

aniline, m-benzyl- (m-amino diphenylmethane). $NH_2C_6H_4CH_2C_6H_5$; m.w. 183.11; cr.; m.p. 46.

aniline, N-benzyl-. See benzylamine, N-phenyl-.

aniline, p-benzyl- (p-aminodiphenylmethane). $NH_2C_6H_4CH_2C_6H_5$; m.w. 183.11; col. monocl. f. lgr.; m.p. 34-5; b.p. 300; i.w.; s.al.

aniline, benzyl ethyl-. $C_6H_5N(C_2H_5)CH_2C_6H_5$; colorl. liq.; sp.gr. 1.034; b.p. 286; s.al.; used in mfr. of intermediates, organic chemicals, dyes.

aniline, benzylidene-. See aniline, N-benzal-.

aniline, N-benzyl-N-methyl-. See benzylamine, N-methyl-N-phenyl-.

aniline, m-bromo-. (1-amino-3-bromobenzene) $BrC_6H_4NH_2$; m.w. 171.97; m.p. 18.5; b.p. 251; s.w.; s.al.

aniline, o-bromo-. (1-amino-2-bromobenzene). $BrC_6H_4NH_2$; m.w. 171.97; cr.; m.p. 32; b.p. 229; s.w.; s.al.

aniline, p-bromo- (1-amino-4-bromobenzene). $BrC_6H_4NH_2$; m.w. 171.97, rhomb.; m.p. 66.4; i.w.; s.al.

aniline, p-bromo-N, N-diethyl-. $BrC_6H_4N(C_2H_5)_2$; m.w. 228.03; need. or pr.; m.p. 33; b.p. 270; i.w.; s.al.

aniline, p-bromo-N, N-dimethyl-. $BrC_6H_4N(CH_3)_2$; m.w. 200.00; m.p. 55; b.p. 264; i.w.; s.al.

aniline, N-butyl-. $C_6H_5NHC_4H_9$; m.w. 149.13; col. liq.; b.p. 240.9; s.w.; s.al.

aniline, p-tert-butyl- (1-amino-4-tert-butylbenzene). $(CH_3)_3CC_6H_4NH_2$; m.w. 149.13; oil; m.p. 17; b.p. 240.9; i.w.; s.al.

aniline, m-chloro- (3-chlorophenylamine). $ClC_6H_4NH_2$; m.w. 127.51; liq.; m.p. −10.4; b.p. 229.8; s.al.

aniline, o-chloro- (2-chlorophenylamine). $ClC_6H_4NH_2$; m.w. 127.51; liq.; m.p. α −14; β −3.5; mixt. 0; b.p. 208.8; i.w.; s.al.

aniline, p-chloro- (4-chloro phenylamine). $ClC_6H_4NH_2$; m.w. 127.51; rhomb. pr.; m.p. 70-2; b.p. 231., s.w.; s.al.

aniline, 2-chloro- 4-nitro-. $ClC_6H_3(NO_2) \cdot NH_2$; m.w. 172.5; m.p. 107; yel. cryst. sol.; s.w.; s.al.; a dye intermediate.

aniline, N-cyano-. See cyananilide.

aniline, N, N-diacetyl-. See diacetanilide.

aniline, N-diamyl- (mixed isomers). $C_6H_5N(C_5H_{11})_2$; m.w. 233.29; dark amber; sp.gr. 0.898 [20]; b.p. 276-292.

aniline, N, N-dibenzyl-. See dibenzylamine, N-phenyl-.

aniline, 2, 4-dibromo-6-nitro-. $Br_2(NO_2)C_6H_2NH_2$; m.w. 295.88; yel. cr.; m.p. 127.

aniline, 2, 6-dibromo-4-nitro-. $Br_2(NO_2)C_6H_2NH_2$; m.w. 295.88; yel. need.; m.p. 203; s.w.

aniline, N, N-dibutyl- (N-phenyldibutylamine). $C_6H_5N(C_4H_9)_2$; m.w. 205.19; col. liq.; b.p. 262.8; i.w.; s.al.

aniline, 2, 3-dichloro-. $Cl_2C_6H_3NH_2$; m.w. 161.96; need. f. lgr.; m.p. 24; b.p. 252; s.al.

aniline, 2, 4-dichloro-. $Cl_2C_6H_3NH_2$; m.w. 161.96; need. f. dil. me. al.; m.p. 63; b.p. 245; s.w.; s.al.

aniline, 2, 5-dichloro-. $Cl_2C_6H_3NH_2$; m.w. 161.96; need. f. lgr.; m.p. 50; b.p. 251; s.w.; s.al.

aniline, 3, 4-dichloro-. $Cl_2C_6H_3NH_2$; m.w. 161.96; need. f. lgr.; m.p. 71.5; b.p. 272; s.al.

aniline, 3, 5-dichloro-. $Cl_2C_6H_3NH_2$; m.w. 161.96; need.; m.p. 50.5; b.p. 260; i.w.; s.al.

aniline, N-(dichloromethylene)- (phenyliminophosgene; phenylcarbylamine chloride.). $C_6H_5NCCl_2$; m.w. 173.96; col. oil.; b.p. 209.

aniline, 2, 6-dichloro-4-nitro-. $Cl_2(NO_2)C_6H_2NH_2$; m.w. 206.96; yel. need. f.al.; m.p. 189-90; s.al.

aniline, N, N-diethyl- (N-phenyldiethylamine). $C_6H_5N(C_2H_5)_2$; m.w. 149 col. inflam. oil; m.p. −34.5; 215.5; s.w.; s.al.

aniline, N, N-diethyl-m-nitro-. N $C_6H_4N(C_2H_5)_2$; m.w. 194.13; oil.; b.p. 288-90.

aniline, N, N-diethyl-p-nitro. $NO_2C_6N(C_2H_5)_2$; m.w. 194.13; yel. mon need. f.al.; m.p. 77-8; s.al.

aniline, N, N-diethyl-p-nitroso-. $C_6H_4N(C_2H_5)_2$; m.w. 178.13; monocl.; m.p. 84; s.w.; s.al.

aniline, ar-dimethyl-. See xylidine.

aniline, N, N-dimethyl-. $C_6H_5N(CH$ m.w. 121.09; yel. liq.; m.p. 2.5.; 192.5-3.5; s.w.; s.al.

aniline, N, N-dimethyl-m-nitro-. N $C_6H_4N(CH_3)_2$; m.w. 166.09; monocl. pr. f. et.; m.p. 66; b.p. 2 i.w.; s.al.

aniline, N, N-dimethyl-o-nitro-. N $C_6H_4N(CH_3)_2$; m.w. 166.09; monocl.; m.p. 60-1; b.p. 154 [24]; s.w s.al.

aniline, N, N-dimethyl-p-nitro-. N $C_6H_4N(CH_3)_2$; m.w. 166.09; fluores. need. f.al.; m.p. 163; i.w.; s.

aniline, N, N-dimethyl-p-nitroso-. N $C_6H_4N(CH_3)_2$; m.w. 150.09; grn. tri leaf.; m.p. 85; i.w.; s.al.

aniline, N, N-dimethyl-p-phenylazo See azobenzene, p-dimethylamino

aniline, 2, 4-dinitro-. (2, 4-dinitr phenylamine). $(NO_2)_2C_6H_3NH_2$; m. 183.06; yel. monocl. f. dil. acet.; m. 176; s.w.; s.al.

aniline, 2, 6-dinitro- (2, 6-dinitr phenylamine). $(NO_2)_2C_6H_3NH_2$; m. 183.06; yel. need. f.al.; m.p. 13 i.w.; s.al.

aniline, N, N-dipropyl-. $C_6H_5N(C_3H_7)$ m.w. 177.16; yel. oil; b.p. 245-6; i.w. s.al.

aniline, ethoxy-. See phenetidene.

aniline, ethoxyl-. See ethanol, 2-anilino-

aniline, m-ethyl- (m-aminoethylbenzene). $C_2H_5C_6H_4NH_2$; m.w 121.09; col. liq.; m.p. −64; b.p. 214-5 s.w.; s.al.

aniline, o-ethyl- (o-aminoethylbenzene). $C_2H_5C_6H_4NH_2$; m.w. 121.09; liq.; m.p. −43; b.p. 215-6; s.w.; s.al.

aniline, p-ethyl- (p-aminoethylbenzene). $C_2H_5C_6H_4NH_2$; m.w. 121.09; glit. leaf. or col. oil.; m.p. −5; b.p. 216.5; s.w.; s.al.

aniline, N-ethyl- (N-ethylphenylamine). $C_6H_5NHC_2H_5$; m.w. 121.09; col. liq.; m.p. −63.5; b.p. 204.72; i.w.; s.al.

aniline, N-ethyl-o-, m-, or p-hydroxy-. See phenol, ethylamino-.

aniline, ethylidine. $C_6H_5N:CHCH_3$; dark-br. liq.; made from aniline and acetaldehyde; rubber accelerator; used in mfr. of intermediates and organic compounds.

aniline, N-ethyl-N-methyl-. $C_6H_5N(CH_3)C_2H_5$; m.w. 135.11; col. liq.; b.p. 201; i.w.; s.al.

aniline, hexahydro-. See cyclohexylamine.

aniline, p, p'-hydrazodi-. See hydrazobenzene, 4, 4'-diamino-.

aniline, hydrochloride. $C_6H_5NH_2 \cdot HCl$; m.w. 129.53; wh. leaf. or need.; m.p. 198; b.p. 245; s.w.; s.al.

aniline, hydroxy-. See phenol, amino-.

aniline, m-hydroxy-N, N-dimethyl-. See phenol, m-dimethyl amino-.

aniline, β-hydroxyethyl-. See ethanol, 2-anilino-.

aniline, p, p'-iminodi-. See diphenylamine, 4, 4'-diamino-.

aniline, m-iodo-. $IC_6H_4NH_2$; m.w. 218.97; leaf. or need.; m.p. 33; i.w.; s.al.

aniline, o-iodo-. $IC_6H_4NH_2$; m.w. 218.97; need.; m.p. 56.5.; s.w.; s.al.

aniline, p-iodo-. $IC_6H_4NH_2$; m.w. 218.97; need. f.w.; m.p. 62.75; i.w.; s.al.

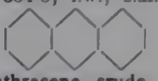
aniline, N-isoamyl- (N-isoamylphenylamine). $C_5H_{11}NHC_6H_5$; m.w. 163.14; liq.; b.p. 254.5; i.w.; s.al.

aniline, p-isopropyl-. See cumidine.

aniline, 2-isopropyl-5-methyl-. See thymylamine.

aniline, 5-isopropyl-2-methyl-. See car-

vacrylamine.
iline, mercapto-. See phenol, amino-thio-.
iline, methenyltri-. See leucaniline.
iline, o-, m-, or p- methoxy-. See o-, m-, or p- anisidine.
iline, o-, m-, or p-methyl-. See toluidine.
iline, N-methyl-. $C_6H_5NHCH_3$; m.w. 107.08; yel. liq.; m.p. −57.0; b.p. 195.7; s.w.; s.al.
iline, p-methylamino-. See p-phenylenediamine, N-methyl-.
iline, methylene-. See s-triazine, hexahydro-1, 3, 5-triphenyl-.
iline, p, p'-methylene bis[N, N-dimethyl-]- (p, p'-tetramethyldiaminodiphenylmethane). $CH_2[C_6H_4N(CH_3)_2]_2$; m.w. 254.19; leaf. or tab.; m.p. 91-2; i.w.; s.al.
iline, p, p'-methylenedi- (4, 4'-diaminodiphenyl methane). $NH_2C_6H_4CH_2C_6H_4NH_2$ m.w. 198.13; pearly leaf. f.bz.; m.p. 93; b.p. 232[11]; s.w.; s.al.
niline, N-methyl-m-nitro-. $NO_2C_6H_4NHCH_3$; m.w. 152.08; red.-yel. need. f.al.; m.p. 66.0; i.w.; s.al.
niline, N-methyl-o-nitro-. $NO_2C_6H_4NHCH_3$; m.w. 152.08; red. need. f. pet. eth.; m.p. 36-7; s.w.; s.al.
niline, N-methyl-p-nitro-. $NO_2C_6H_4NHCH_3$; m.w. 152.08; yel. need. f.al.; m.p. 152; i.w.; s.al.
niline, N-methyl-p-nitroso-. $NOC_6H_4NHCH_3$; m.w. 136.08; bl.fl.; m.p. 118.
niline, N-methyl-N-nitroso- (methylphenylnitrosamine). $C_6H_5N(CH_3)NO$; m.w. 136.08; yel. oil.; m.p. 12-5; b.p. 225; i.w.; s.al.
niline, N-methyl-N, 2, 4, 6-tetranitro-. See tetryl.
niline, N-monoamyl-. See aniline, N-amyl-.
niline, m-nitro- (1-amino-3-nitrobenzene). $NO_2C_6H_4NH_2$; m.w. 138.06; yel. rhomb. need. f.al.; m.p. 111.8; b.p. 286; s.w.; s.al.
niline, N-nitro- (phenylnitramine; nitranilide; diazobenzolic acid). $C_6H_5NHNO_2$ or $C_6H_5N{:}NOOH$; m.w. 138.06; leaf. f.lgr.; m.p. 46; s.w.; s.al.
niline, o-nitro- (1-amino-2-nitrobenzene). $NO_2C_6H_4NH_2$; m.w. 138.06; or. rhomb. need. f.al.; m.p. 71.5; s.w.; s.al.
niline, p-nitro- (1-amino-4-nitrobenzene). $NO_2C_6H_4NH_2$; m.w. 138.06; yel. monocl. need. f.al.; m.p. 147.5; b.p. 331.73; s.w.; s.al.
niline, p-nitroso-. $NOC_6H_4NH_2$; m.w. 122.06; steel bl. need. f. bz.; m.p. 174; s.w.; s.al.
niline, ar-pentabromo-. $C_6Br_5NH_2$; m.w. 487.60; need.; m.p. 222; b.p. 261-2; s.al.
niline, ar-pentachloro-. $C_6Cl_5NH_2$; m.w. 265.31; need. f.al.; m.p. 232; s.al.
niline, ar-pentamethyl- (aminopentamethylbenzene). $C_6(CH_3)_5NH_2$; m.w. 163.14; monocl. f.al.; m.p. 152; b.p. 278; i.w.; s.al.
niline, p-phenyl-. See xenylamine.
niline, N-phenyl-. See diphenylamine.
niline, phenylazo-. See azobenzene, amino-.
niline, N-(2-propenyl)-. See aniline, N-allyl-.
niline, N-propyl-. $C_6H_5NHC_3H_7$; m.w. 135.11; liq.; b.p. 222; i.w.; s.al.
niline, o-propyl-. (1-amino-2-propylbenzene). $CH_3CH_2CH_2C_6H_4NH_2$; m.w. 135.11; liq.; b.p. 222-4; i.w.; s.al.
niline, p-propyl- (1-amino-4-propylbenzene). $CH_3CH_2CH_2C_6H_4NH_2$; m.w. 135.11; liq. b.p. 224-6; s.w.
niline sulfate. $(C_6H_5NH_2)_2H_2SO_4$; m.w. 284.20; wh. cryst. powd.; sp.gr. 1.337; s.w., s.al.; used in mfr. of aniline black; reagent for detecting wood; in printing textiles, and medicine.
m-anilinesulfonic acid. See metanilic acid.
o-anilinesulfonic acid. See orthanilic acid.
p-anilinesulfonic acid. See sulfanilic acid.
aniline, 2, 3, 4, 5-tetrachloro-. $C_6HCl_4NH_2$; m.w. 230.86; need. f.al.; m.p. 118; s.al.
aniline, 2, 3, 5, 6-tetrachloro-. $C_6HCl_4NH_2$; m.w. 230.86; cr. f.lgr.; m.p. 90; i.w.; s.al.
aniline, 2, 3, 4, 5-tetramethyl-. $(CH_3)_4C_6HNH_2$; m.w. 149.13; leaf. f.w.; m.p. 64-6; b.p. 259-60; s.w.; s.al.
aniline, 2, 3, 4, 6-tetramethyl-. See isoduridine.
aniline, p, p'-thiodi- (4, 4'-diaminodiphenyl sulfide; thioaniline). $S(C_6H_4NH_2)_2$; m.w. 216.17; need. f.w.; m.p. 108-9; s.w.; s.al.
aniline, 2, 4, 6-tribromo-. $Br_3C_6H_2NH_2$; m.w. 329.79; col. rhomb. bi-pyr. need. f.bz.; m.p. 119; b.p. 300; i.w.; s.al.
aniline, 3, 4, 5-tribromo-. $Br_3C_6H_2NH_2$; m.w. 329.79; need.; m.p. 118-9; i.w. s.al.
aniline, 2, 3, 4-trichloro-. $Cl_3C_6H_2NH_2$; m.w. 196.41; need. f.lgr.; m.p. 67.5; b.p. 291.5; s.al.
aniline, 2, 4, 5-trichloro-. $Cl_3C_6H_2NH_2$; m.w. 196.41; need. f.lgr.; m.p. 96; b.p. 270; s.al.
aniline, 2, 4, 6-trichloro- (sym-trichloroaniline). $Cl_3C_6H_2NH_2$; m.w. 196.41; lng. need. f.lgr.; m.p. 77.5; b.p. 262.4; i.w.; s.al.
aniline, 2, 4, 5-trimethyl-. See pseudocumidine.
aniline, 2, 4, 6-trimethyl-. See mesidine.
aniline, 2, 4, 6-trinitro- (picramide; "T.N.A."). $(NO_2)_3C_6H_2NH_2$; m.w. 228.06; yel. monocl. need. f. ac.a.; m.p. 188; s.w.; s.al.
animal charcoal. Substance obtained by the destructive distillation of bones at a high temperature, possessing the property of absorbing organic coloring matter from solutions.
animal sizing. Glue or gelatin sizing.
animal starch. See glycogen.
animi gum. See gum, Zanzibar.
animic gum. See gum, Zanzibar.
anionoid. If the formation of a covalent bond in the complex A-B takes place by the union of A^- with B^+ then A is the anionoid and B is the kationoid.
anionotropic change. Isomerization occurring, in the presence of a catylst, wherein a negatively charged ion is released from an organic molecule.
anion. Ion which travels to the anode.
anisalcohol. See anisyl alcohol.
anisaldehyde (anisic aldehyde; p-methoxybenzaldehyde; p-anisaldehyde; aubepine). $CH_3OC_6H_4CHO$; m.w. 136.06; col. liq.; m.p. 2.5; b.p. 247; s.w.; s.al.
o-anisaldehyde. See benzaldehyde, o-methoxy-.
anisaldehyde, 3-hydroxy-. See isovanillin.
anise camphor. See anethole.
anise, oil. See oil, anise.
anisic acid (p-methoxybenzoic acid; p-anisic acid). $CH_3OC_6H_4COOH$; m.w. 152.06; col. monocl. need. or pr.; m.p. 184.2; b.p. 280; s.w.; s.al.
anisic acid, ethyl ester. $CH_3OC_6H_4COOC_2H_5$; m.w. 180.09; m.p. 7; b.p. 269; i.w.; s.al.
anisic acid, 2-hydroxy-6-methyl-. See everninic acid.
anisic acid, methyl ester (methyl anisate). $CH_3OC_6H_4COOCH_3$; m.w. 166.08; col. sc. f.al.; m.p. 48; b.p. 256; i.w.; s.al.
anisic acid, piperazinium salt. $C_4H_{10}N_2{\cdot}2C_8H_8O_3$; m.w. 390.22; wh. cr.; m.p. 172-4; s.w.; s.al.
anisic aldehyde. See anisaldehyde.
m-anisidine (m-methoxyaniline). $CH_3OC_6H_4NH_2$; m.w. 123.08; col. liq.; m.p. < −12; b.p. 251; s.w.; s.al.
o-anisidine (o-methoxyaniline). $CH_3OC_6H_4NH_2$; m.w. 123.08; col. liq.; m.p. 5.2; b.p. 225; s.w.; s.al.
p-anisidine (p-methoxyaniline). $CH_3OC_6H_4NH_2$; m.w. 123.08; rhomb. pl.; m.p. 57.7.; b.p. 245; s.w.; s.al.
o-anisidine, N-acetyl-. See o-acetaniside.
anisole (methoxybenzene; methyl phenyl ether). $C_6H_5OCH_3$; m.w. 108.06; col. liq.; m.p. −37.5; b.p. 155; i.w.; s.al.
anisole, p-acetamido-. See p-acetaniside.
anisole, p-acetyl-. See acetophenone, p-methoxy-.
anisole, p-allyl-. See estragole.
anisole, o-bromo- (1-bromo-2-methoxybenzene; o-bromophenyl methyl ether). $BrC_6H_4OCH_3$; m.w. 186.97; oil; b.p. 221-3; i.w.; s.al.
anisole, p-bromo- (1-bromo-4-methoxybenzene; p-bromophenyl methyl ether.). $BrC_6H_4OCH_3$; m.w. 186.97; cr.f.et.; m.p. 11; b.p. 215; s.w.; s.al.
anisole, 2, 4-dinitro- (2, 4-dinitrophenyl methyl ether). $(NO_2)_2C_6H_3OCH_3$; m.w. 198.06; col.-yel. monocl. need. f.w. or al.; m.p. 88-9; s.w.; s.al.
anisole, o-hydroxy-. See guaiacol.
anisole, m-nitro- (1-methoxy-3-nitrobenzene). $NO_2C_6H_4OCH_3$; m.w. 153.06; need. f.al.; m.p. 38; b.p. 258; i.w.; s.al.
anisole, o-nitro- (1-methoxy-2-nitrobenzene). $NO_2C_6H_4OCH_3$; m.w. 153.06; col. liq.; m.p. 9.4; b.p. 277; s.w.; s.al.
anisole, p-nitro- (1-methoxy-4-nitrobenzene). $NO_2C_6H_4OCH_3$; m.w. 153.06; col. monocl. pr.f.al.; m.p. 54; b.p. 260; s.w.; s.al.
anisole, p-propenyl-. See anethole.
anisole, 2, 4, 6-trinitro- (picric acid methyl ether; methyl picrate). $(NO_2)_3C_6H_2OCH_3$; m.w. 243.06; col. monocl. pl.f.al.; m.p. 68.4; i.w.; s.al.
anisole, m-vinyl- (m-methoxystyrene). $CH_2{:}CHC_6H_4OCH_3$; m.w. 134.08; oil; b.p. 89-90; i.w.; s.al.
anisole, o-vinyl- (o-methoxystyrene). $CH_2{:}CHC_6H_4OCH_3$; m.w. 134.08; arom. liq.; b.p. 195-200; i.w.; s.al.
anisole, p-vinyl- (p-methoxystyrene). $CH_2{:}CHC_6H_4OCH_3$; m.w. 134.08; arom. liq.; b.p. 204[736]; i.w.; s.al.
anisotropic. Pertaining to crystals having physical properties which differ in different directions.
anisoyl chloride (p-methoxybenzoyl chloride; anisyl chloride). $CH_3OC_6H_4COCl$; m.w. 170.51; need. m.p. 27; b.p. 145[14]; i.w.
anisyl alcohol. (p-methoxybenzyl alcohol; anisalcohol). $CH_3OC_6H_4CH_2OH$; m.w. 138.08; need.; m.p. 25; b.p. 258.8; i.w.; s.al.
anisyl chloride. See anisoyl chloride.
ankerite. A mineral consisting of the calcium, iron, and magnesium carbonates.
annabergite. Hydrated arsenate of nickel, $Ni_3As_2O_8{\cdot}8H_2O$.
annatto (arnatto, bixine, butter color). A yellow vegetable dye containing bixin; used for coloring butter, cheese, oils; wood stains; silk and cotton dye.
annealing. Heating and slow cooling to increase ductility or remove internal stresses, applied to metals and glass.
annihilation radiation. Radiation resulting from collision and mutual annihilation of an electron and a positron.
anode. Positive pole of an electrolytic system; that pole at which oxidation, or the loss of electrons, takes place. In a secondary cell it is positive, and in a primary cell it is negative.
anode drop. Sharp fall of e.m.f. at anode of a cell or vacuum tube.
Anode process. An electrolytic method for producing rubber goods or coatings from rubber latex.
anode ray. Positive ray emanating from the anode in a vacuum tube, composed of protons.
anodic substitution. Electrolytic process whereby a hydrogen atom in the depolarizer is replaced by another atom or group.
anodic treatment. Chemical coating given to the surface of aluminum or other metal by making it the anode in an electrolytic bath.
anodyne. See analgesic.
anogene. Rock that has been forced up from below earth's crust.
anol (p-propenyl phenol.). $CH_3CH{:}CHC_6H_4OH$; m.w. 134.08; col. leaf. f.h.w.; m.p. 93; s.w.; s.al.
anolyte. Liquid surrounding the anode.
anomalous dispersion. Inversion of usual change of refractive index with wave length near an absorption band.
Anon (Hexanon, Sextone). Cyclohexanone.
anorthite (lime feldspar). A mineral; $CaO{\cdot}Al_2O_3{\cdot}2SiO_2$; tricl., col., wh. or grayish. (yelsh. blsh. or redsh.); sp.gr. 2.703-2.763; hardness 6.0-6.5.
anorthoclase (soda-microcline). A mineral of the feldspar group; $(Na,K)_2O{\cdot}Al_2O_3{\cdot}6SiO_2$; tricl.; sp.gr. 2.56-2.651; hardness 6,0-6.5.
Ansol. Anhydrous alcohol containing certain denaturants; a mixture of anhydrous ethyl alcohol and ethyl acetate used as a solvent for nitrocellulose lacquers.
anthelmintic. Drug which destroys or ejects intestinal worms.
anther. Part of the stamen of flowers which forms and contains pollen.
anthophyllite. A mineral; (Mg, Fe)SiO_3; rhomb., br., yelsh. or grnsh., to emer. grn.; sp.gr. 2.857-3.2; hardness 5.5-6.0.
anthracene. $C_6H_4{:}(CH_2){:}C_6H_4$; m.w. 178.08; col. monocl.; m.p. 217; b.p. 354-5; i.w.; s.al.; structurally it is:



anthracene, crude. The solid product, containing anthracene, obtained on cooling the coal tar distillate collected above about 270° C.
anthracene oil. See oil, anthracene.
anthracene, 1-, 2-, or 9- amino-. See 1-, 2-, or 9- anthrylamine.
1-, 2-, or 9- anthracene carboxylic acid. See 1-, 2-, or 9- anthroic acid.
anthracenediamine. See anthradiamine.
anthracene, diamino-. See anthradiamine.
anthracene, 9, 10-dibromo-. $C_6H_4(CBr)_2C_6H_4$; m.w. 335.89; yel. need. f. xylene; m.p. 221; i.w.; s.al.
anthracene, 9, 10-dichloro- (ms-dichloroanthracene). $C_6H_4(CCl)_2C_6H_4$; m.w. 246.98; yel. need. f. CCl_4; m.p. 209-10; s.al.
anthracene, 9, 10-dihydro- (anthracene 9, 10-dihydride). $C_6H_4{:}(CH_2)_2{:}C_6H_4$; m.w. 180.09; col. tricl. or monocl. f.al.; m.p. 108.5; b.p. 305; i.w.; s.al.
anthracene, 9, 10-dihydro-9-keto-. See anthrone.
anthracene, 1, 2-dihydroxy-. See 1, 2-anthracenediol.
anthracene, 9, 10-dihydroxy-9, 10-diketo-. See anthraquinone.
anthracene, 2, 3-dimethyl-. $C_{14}H_8(CH_3)_2$; m.w. 206.11; col. fluores. leaf. f.bz.; m.p. 252; s.al.
anthracene, 2, 4-dimethyl-. $C_{14}H_8(CH_3)_2$; m.w. 206.11; need. f.al.; m.p. 71; s.al.
1, 2-anthracenediol (1, 2-anthradiol; 1, 2-dihydroxyanthracene). $C_6H_4(CH)_2C_6H_2(OH)_2$; m.w. 210.08; grnsh. leaf.; m.p. 160-2; s.al.
1, 5-anthracenediol. See rufol.
1, 8-anthracenediol. See chrysasol.
2, 6-anthracenediol. See flavol.
9, 10-anthracenediol. See oxanthranol.
anthracene, 9-ethyl-. $C_6H_4CHC(C_2H_5)C_6H_4$; m.w. 206.11; leaf. f.al.; m.p. 59; i.w.; s.al.
anthracene, 9-ethyl-9, 10-dihydro-. $C_6H_4C_2H_3(C_2H_5)C_6H_4$; m.w. 208.12; oil; i.w.; s.al.
anthracene, a-hexahydride. See anthracene; a-hexahydro-.
anthracene, a-hexahydro- (anthracene a-hexahydride). $C_{14}H_{16}$; m.w. 184.12; col. leaf.; m.p. 63; b.p. 290; i.w.; s.al.
anthracene, 1- or 2-hydroxy-. See 1- or 2-anthrol.
anthracene, 9-hydroxy-. See anthranol.
anthracene, 1-methyl- (a-methylanthracene). $C_6H_4(CH)_2C_6H_3CH_3$; m.w. 192.09; col. leaf. f.al.; m.p. 86; b.p.

200; i.w.; s.al.

anthracene, 2-methyl- (β-methylanthracene). $C_6H_4(CH)_2C_6H_3CH_3$; m.w. 192.09; col. sc.; m.p. 207; i.w.; s.al.

anthracene, 9-methyl-. $C_2H_4C(CH_3)$-CHC_6H_4; m.w. 192.09; m.p. 80.

anthracene, 9-nitro-. $C_{14}H_9NO_2$; m.w. 223.08; yel. need. f.al.; m.p. 146; b.p. >360; s.al.

anthracene, 9-phenyl-. $C_{14}H_9C_6H_5$; m.w. 254.11; leaf. f.al.; m.p. 153; b.p. 417; s.al.

anthrachrysazin. See anthrachrysone.

anthrachrysone (1, 3, 5, 7-tetrahydroxyanthraquinone; anthrachrysazin). $C_{14}H_4O_2(OH)_4$; m.w. 272.06; silky yel. need. (+2H_2O); m.p. >360; i.w.; s.al.

anthracite. A hard coal containing a high percentage of fixed carbon, burning with no smoke.

9, 10-anthradiamine (9, 10-anthracenediamine; 9, 10-diamino anthracene). $C_{14}H_8(NH_2)_2$; m.w. 208.11; pa. yel leaf; m.p. 160-6; i.w.

1, 2-anthradiol. See 1, 2-anthracenediol

anthraflavic acid (2, 6-dihydroxyanthraquinone). $HOC_6H_3(CO)_2C_6H_3OH$; m.w. 240.06; yel. need. f.al.; m.p. 330; i.w.; s.al.

anthragallol (1, 2, 3-trihydroxyanthraquinone). $C_6H_4(CO)_2C_6H(OH)_3$; m.w. 256.06; or. red need. f.dil. ac.a.; s.w.; s.al.

anthrahydroquinone. See oxanthranol

meso- anthramine. See 9-anthrylamine

anthranil. C_7H_5NO; m.w. 119.05; col oil.; m.p. <−18; b.p. 215; s.w.; s.al.

anthranilaldehyde (o-aminobenzaldehyde). $NH_2C_6H_4CHO$; m.w. 121.06; silv. leaf.; m.p. 39-40; s.w.; s.al.

anthranilic acid (o-aminobenzoic acid). $NH_2C_6H_4COOH$; m.w. 137.06; col. trim. rhomb. leaf.; m.p. 145; s.w.; s.al.

anthranilic acid, N-acetyl- (o-acetamidobenzoic acid). $CH_3CONHC_6H_4$-$COOH$; m.w. 179.08; rhomb. f.ac.a.; m.p. 185; s.w.; s.al.

anthranilic acid, N-benzoyl- (o-benzamidobenzoic acid). C_6H_5CONH-C_6H_4COOH; m.w. 241.09; lng. need. f.al.; m.p. 181; i.w.; s.al.

anthranilic acid, N-carboxy-, anhydride. See isatoic anhydride.

anthranilic acid, N-(carboxymethyl)- (phenylglycine-o-carboxylic acid; anthranalidoacetic acid). $HOOC$-$CH_2NHC_6H_4COOH$; m.w. 195.08; need. f.me.al.; m.p. 215; s.w.; s.al.

anthranilic acid, N-ethyl- (o-ethylaminobenzoic acid; 2-ethylaminobenzenecarboxylic acid). $C_2H_5NHC_6H_4$-$COOH$; m.w. 165.09; pr.; m.p. 152-3; s.al.

anthranilic acid, ethyl ester (ethyl anthranilate; ethyl-o-aminobenzoate). $NH_2C_6H_4COOC_2H_5$; m.w. 165.09; cr. m.p. 13; b.p. 260; s.w.; s.al.

anthranilic acid, methyl ester (methyl anthranilate). $NH_2C_6H_4COOCH_3$; m.w. 151.08; col. liq.; m.p. 8.2; b.p. 135.5 [15]; s.w.; s.al.

anthranilic acid, N-methyl-, methyl ester $CH_3NHC_6H_4COOCH_3$; m.w. 165.09; b.p. 256; i.w.; s.al.

anthranilic acid, 3-nitro- (2-amino-3-nitrobenzoic acid). $NO_2(NH_2)C_6H_3$-$COOH$; m.w. 182.06; yel. need. f.w.; m.p. 204; i.w.; s.al.

anthranilic acid, 4-nitro- (2-amino-4-nitrobenzoic acid). $NO_2(NH_2)C_6H_3$-$COOH$; m.w. 182.06; red. need.; m.p. 264; s.w.; s.al.

anthranilic acid, 5-nitro- (2-amino-5-nitrobenzoic acid). $NO_2(NH_2)C_6H_3$-$COOH$; m.w. 182.06; yel. need.; m.p. 263; s.w.; s.al.

anthranilic acid, 6-nitro- (2-amino-6-nitrobenzoic acid). $NO_2(NH_2)C_6H_3$-$COOH$; m.w. 182.06; yel. leaf. f.w.; s.w.; s.al.

anthranilic acid, N-phenyl- (o-anilinobenzoic acid). $C_6H_5NHC_6H_4COOH$; m.w. 213.09; need. f.al.; m.p. 181; s.w.; s.al.

anthranalido acetic acid. See anthranilic acid, N-(carboxymethyl)-.

anthranilonitrile (o-aminobenzonitrile; o-aminophenyl cyanide). $NH_2C_6H_4CN$; m.w. 118.06; col.-ylsh. pr.; m.p. 50; b.p. 264-6; s.al.

anthranol (9-anthrol; 9-hydroxyanthracene). $C_{14}H_9 \cdot OH$; m.w. 194.08; pa. yel. need.; i.w.; s.al.

anthranol, 9, 10-dihydro-. (hydroanthranol). $C_6H_4CHOHC_6H_4CH_2$; m.w. 196.09; need. f. pet. eth.; m.p. 76.; s.w.; s.al.

anthranylamine. See 9-anthrylamine.

anthrapurpurin (1, 2, 7-trihydroxyanthraquinone; isopurpurin). $HOC_6H_3(CO)_2$-$C_6H_2(OH)_2$; m.w. 256.06; or. need. f.al.; m.p. 369; s.w.; s.al.

α-anthraquinoline. See naphtho-[2, 3-f] quinoline.

anthraquinonazine, N, N'-dihydro-. See indanthrene.

anthraquinone (9, 10-dihydroxy-9, 10-diketoanthracene). $C_6H_4 \cdot (CO)_2$:-C_6H_4; m.w. 208.06; ylsh. rhomb.; b.p. 379-81.; i.w.; s.al.

anthraquinone, 1-amino- (α-anthraquinonylamine). $C_6H_4(CO)_2C_6H_3$-NH_2; m.w. 223.08; red. need.; m.p. 252; i.w.; s.al.

anthraquinone, 2-amino- (β-anthraquinonylamine). $NH_2C_6H_3(CO)_2C_6H_4$; m.w. 223.08; red. need. f.al.; m.p. 302; i.w.; s.al.

anthraquinone, 2-amino-1-hydroxy- (β alizarin amide). $C_{14}H_6O_2 \cdot (OH)NH_2$; m.w. 239.08; br. need. f.al.; m.p. 226-7; i.w.; s.al.

anthraquinone, 1-bromo-. $C_6H_4(CO)_2$-C_6H_3Br; m.w. 286.97; yel. need. f.bz.; m.p. 188; s.al.

anthraquinone, 2-bromo-. $C_6H_4(CO)_2$-C_6H_3Br; m.w. 286.97; yel. need. f. amyl. al.; m.p. 204-5; s.al.

2-anthraquinonecarboxylic acid, 5, 6 (or 7, 8)-dihydroxy-. See 6 (or 7)-alizarincarboxylic acid.

anthraquinone, 1-chloro-. $C_6H_4(CO)_2$-C_6H_3Cl; m.w. 242.51; yel. need.; m.p. 162; i.w.; s.al.

anthraquinone, 2-chloro-. $C_6H_4(CO)_2$-C_6H_3Cl; m.w. 242.51; pa. yel. need. f.ac.a. or al.; m.p. 211; i.w.; s.al.

anthraquinone, 1, 2-diamino-. $C_6H_4(CO)_2C_6H_2(NH_2)_2$; m.w. 238.09.; vlt.cr., grn. cast.; m.p. 303.

anthraquinone, 1, 3-diamino-. $C_6H_4(CO)_2C_6H_2(NH_2)_2$; m.w. 238.09; brick red cr. f. $PbNO_3$; m.p. 290.

anthraquinone, 1, 4-diamino-. $C_6H_4(CO)_2C_6H_2(NH_2)_2$; m.w. 238.09; dk. vlt. cr.f.al.; m.p. 268; s.w.; s.al.

anthraquinone, 1, 5-diamino-. NH_2-$C_6H_3(CO)_2C_6H_3NH_2$; m.w. 238.09; red. need. f.al. or ac.a.; m.p. 319; s.w.; s.al.

anthraquinone, 1, 6-diamino-. NH_2-$C_6H_3(CO)_2C_6H_3NH_2$; m.w. 238.09; red. cr.; m.p. 290.

anthraquinone, 1, 7-diamino-. NH_2-$C_6H_3(CO)_2C_6H_3NH_2$; m.w. 238.09; red. cr.; m.p. 290.

anthraquinone, 1, 8-diamino-. NH_2-$C_6H_3(CO)_2C_6H_3NH_2$; m.w. 238.09; red. cr.f.al.; m.p. 262; i.w.; s.al.

anthraquinone, 2, 3-diamino-. $C_6H_4(CO)_2C_6H_2(NH_2)_2$; m.w. 238.09; red. cr.; m.p. >320.

anthraquinone, 2, 6-diamino-. NH_2-$C_6H_3(CO)_2C_6H_3NH_2$; m.w. 238.09; redsh.-br. pr. f.h. pyr.; s.al.

anthraquinone, 2, 7-diamino-. NH_2-$C_6H_3(CO)_2C_6H_3NH_2$; m.w. 238.09; or. cr. f.al. or nitrobz.; m.p. >330; i.w.; s.al.

anthraquinone, 2, 3-dibromo- (β-dibromoanthraquinone). $C_6H_4(CO)_2$-$C_6H_2Br_2$; m.w. 365.88; yel. need.; m.p. 281; s.al.

anthraquinone, 2, 7-dibromo-. C_6H_3-$Br(CO)_2C_6H_3Br$; m.w. 365.88; yel. need. or pl.; m.p. 236.5; s.al.

anthraquinone, 1, 2-dihydroxy-. See alizarin.

anthraquinone, 1, 3-dihydroxy-. See purpuroxanthin.

anthraquinone, 1, 4-dihyroxy-. See quinizarin.

anthraquinone, 1, 5-dihydroxy-. See anthrarufin.

anthraquinone, 1, 8-dihydroxy-. See chrysazin.

anthraquinone, 2, 3-dihydroxy-. See hystazarin.

anthraquinone, 2, 6-dihydroxy-. See anthraflavic acid.

anthraquinone, 2, 7-dihydroxy-. See isoanthraflavic acid.

anthraquinone, 1, 3-dinitro-. $C_6H_4(CO)_2$-$C_6H_2(NO_2)_2$; m.w. 298.06; yel. need.; m.p. 240.

anthraquinone, 1, 5-dinitro-. NO_2-$C_6H_3(CO)_2C_6H_3NO_2$; m.w. 298.06; pa.-yel. need. f. nitro-bz. or xylene; m.p. 384-5; i.w.; s.al.

anthraquinone, erythrohydroxy-. See anthraquinone, 1 (or α)-hydroxy-.

anthraquinone, 1, 2, 3, 5, 6, 7-hexahydroxy-. See rufigallic acid.

anthraquinone, 1 (or α)-hydroxy- (erythrohydroxy anthraquinone). $C_6H_4(CO)_2C_6H_3OH$; m.w. 224.06; or. cr. f.al.; m.p. 190; i.w.; s.al.

anthraquinone, 1, 2-hydroxy-. See alizarin.

anthraquinone, 2 (or β)-hydroxy-. C_6H_4-$(CO)_2C_6H_3OH$; m.w. 224.06; yel. leaf. or need. f.al.; m.p. 302; s.w.; s.al.

anthraquinone, 2-methyl-. $C_6H_4(CO)_2$-$C_6H_3CH_3$; m.w. 222.08; col.-yelsh. need. f.al.; m.p. 175-7; s.al.

anthraquinone, 1-nitro-. $NO_2C_6H_3$-$(CO)_2C_6H_4$; m.w. 253.06; yel. need. f.ac.a.; m.p. 230; i.w.; s.al.

anthraquinone, 2-nitro-. $NO_2C_6H_3$-$(CO)_2C_6H_4$; m.w. 253.06; yel. need. f.al.; m.p. 181; i.w.; s.al.

anthraquinone, 1, 2, 5, 6-tetrahydroxy-. See rufiopin.

anthraquinone, 1, 2, 5, 8-tetrahydroxy-. See quinalizarin.

anthraquinone, 1, 3, 5, 7-tetrahydroxy-. See anthrachrysone.

anthraquinone, 1, 2, 3-trihydroxy-. See anthragallol.

anthraquinone, 1, 2, 4-trihydroxy-. See purpurin.

anthraquinone, 1, 2, 5-trihydroxy-. (2-hydroxyanthrarufin). $HOC_6H_3(CO)_2$-$C_6H_2(OH)_2$; m.w. 256.06; red. need.; m.p. 273-4; i.w.

anthraquinone, 1, 2, 6-trihydroxy-. See flavopurpurin.

anthraquinone, 1, 2, 7-trihydroxy-. See anthrapurpurin.

anthraquinone, 1, 2, 8-trihydroxy- (2-hydroxychrysazin). $HOC_6H_3(CO)_2$-$C_6H_2(OH)_2$; m.w. 256.06; or. need.; m.p. 230; i.w.; s.al.

anthraquinone, 1, 3, 8-trihydroxy-6-methyl-. See emodin.

α-anthraquinonylamine. See anthraquinone, 1-amino-.

β-anthraquinonylamine. See anthraquinone, 2-amino-.

anthrarufin (1, 5-dihydroxyanthraquinone). $HOC_6H_3(CO)_2C_6H_3OH$; m.w. 240.06; pa. yel. leaf. f.ac.a. m.p. 280; s.w.; s.al.

anthrarufin, 2-hydroxy-. See anthraquinone, 1, 2, 5-trihydroxy-.

1-anthroic acid (1-anthracenecarboxylic acid; α-anthroic acid). $C_{14}H_9COOH$; m.w. 222.08; yel. need.; m.p. 245; i.w.; s.al.

2-anthroic acid (2-anthracenecarboxylic; β-anthroic acid). $C_{14}H_9COOH$; m.w. 222.08; yel. leaf.; m.p. 281; i.w.; s.al.

9-anthroic acid (9-anthracenecarboxylic acid; ms-anthroic acid). $C_{14}H_9COOH$; m.w. 222.08; pa. yel. need. f.al.; s.w.; s.al.

1-anthrol (1-hydroxyanthracene). $C_{14}H_9 \cdot OH$; m.w. 194.08; br. need. or leaf. f.al.; i.w.; s.al.

2-anthrol (2-hydroxyanthracene). $C_{14}H_9 \cdot OH$; m.w. 194.08; brnsh. need.; i.w.; s.al.

9-anthrol. See anthranol.

anthrone (9, 10-dihydro-9-keto anthracene). $C_{14}H_{10}O$; m.w. 194.08; col. need.; m.p. 154-5; i.w.; s.al.

anthrone, 10-hydroxy-. See oxanthranol.

1-anthrylamine (α-anthramine; aminoanthracene). $C_{14}H_{11}N$; m.w. 193.09; m.p. 119.

2-anthrylamine (α-anthramine; aminoanthracene). $C_{14}H_{11}N$; m.w. 193.09; yel. need.; m.p. 236-7; i.s.al.

9-anthrylamine (9-aminoanthracene; meso-anthramine; anthranylamine) $C_6H_4\langle C(NH_2) \rangle C_6H_4$; m.p. 193. yel. cr.; m.p. 145-50; s.al.

antibody. A protective substance produced in the body which renders immune to a certain disease, e.g. an toxin.

anticathode (target). A piece of me opposite the cathode in an x-ray tu against which the cathode rays a bombarded and thus produces x-ra

antichlor. Compound used to neutrali free chlorine or hypochlorite in bleac ing process, e.g. sodium bisulfite.

anticline. Upfolding geological strat

antielectron. See positron.

antienzyme. Substance which has marked inhibitory action on certa enzymes.

antifebrin. See acetanilide.

antifoam. Material which prevent foaming by greatly increasing th surface tension.

Antiformin. A water solution of caust soda and sodium hypochlorite, used a a disinfectant.

antifouling composition. Coating ap plied to hull of a ship to preven formation of marine growths, such a barnacles.

antigen. A substance which, whe introduced into the animal body stimulates the formation of a specific antibody, e.g. diphtheria toxin.

antigorite. A mineral; $3MgO \cdot 3SiO_2$-$2H_2O$; rhomb., brnsh. grn.; sp.gr 2.55-2.62; hardness 3-4.

antiknock fuel. Gasoline, or other motor fuel, capable of burning smoothly when highly compressed

antiknock value (octane number). Indication of tendency of a fuel to detonate or knock when used in an internal combustion engine. The per cent. of 2, 4, 4-trimethyl pentane (isoöctane) in a blend with pure heptane, which blend knocks to the same degree as the fuel under similar conditions.

antimonate. Salt in which antimony has a valence of 5, e.g. $Na_2H_2Sb_2O_7$.

antimonial lead. An alloy of lead (92-4) and antimony (6-8); sp.gr. 11.0; m.p 245-90; the antimony hardens the lead; also an alloy of lead (85) and antimony (15), resistant to action of sulfuric acid; used in mfr. of type metal.

antimonic acid meta-. $HSbO_3$; m.w 170.77; wh. powd.; s.g. 6.6; s.w.

antimonic acid ortho-. H_3SbO_4; m.w 188.78; wh. powd.; s.g. 6.6; s.w.

antimonic acid pyro-. $H_4Sb_2O_7$; m.w 358.56; powd.; m.p. $-H_2O$ 200; s.w

antimonine. See antimony lactate.

antimonite. See stibnite.

antimonite, pyro-. See kermesite.

antimonous acid meta-. $HSbO_2$; m.w 154.77; i.w.; i.al.

antimonous acid, ortho-. H_3SbO_3; m.w 172.78; wh. amor.; i.w.; i.al.

antimony. Sb; m.w. 121.76; hex. silv wh.; s.g. 6.684 [25]; m.p. 630; b.p. 1380 i.w.; hardness 3-3.5; valence 3 or 5; a metallic element, extremely brittle, of flaky crystalline texture, blue-white color and metallic luster, not acted upon by air at room temperature occurring native rarely; extracted from oxide and sulfide ores by roasting and reducing; used largely in the alloys type metal, stereotype metal and Babbitt metal.

antimony ammonium fluoride. $Sb(NH_4)_2F_5$; m.w. 252.84; rhomb col.; s.w.

antimony black. See antimony sulfide tri-.

antimony blend. See kermesite.

imony bromide. $SbBr_3$; m.w. 361.51; homb. col.; s.g. 4.148 ^{23}; m.p. 96.6; .p. 280; s.al.

imony chloride. See antimony chloride, tri-.

imony chloride, penta-. $SbCl_5$; m.w. 299.05; liq. or monocl. wh.; s.g. liq. 2.336; m.p. 2.8; b.p. 140.

imony chloride, tri- (butter of antimony). $SbCl_3$; m.w. 228.13; rhomb. col., deliq.; s.g. 3.140 ^{25}; m.p. 73; b.p. 223; s.w.; s.al.

timony fluoride, penta-. SbF_5; m.w. 216.76; oily col. liq.; s.g. liq. 2.99 ^{23}; m.p. 7.0; b.p. 149.5; s.w.

timony fluoride, tri-. SbF_3; m.w. 178.76; oct.; s.g. 4.379 $^{30.9}$; m.p. 292; s.w.

timony hydride (stibine). SbH_3; m.w. 124.78; col. gas; s.g. liq. 2.26 $^{-25}$; m.p. −88; b.p. −17; s.w.; s.al.

timony iodide, penta-. SbI_5; m.w. 756.36; br.; b.p. 79.

timony, iodide, tri-. SbI_3; m.w. 502.52; trig., monocl. red, rhomb. yel.; s.g. mon. 4.768 ^{22}; m.p. 167; b.p. 401; s.al.

timony lactate (antimonine). $Sb(C_3H_5O_3)_3$; m.w. 388.88; cr. yel.; s.w.

timony needles. See antimony sulfide, tri-.

timony oxide (senarmontite). Sb_2O_3; m.w. 291.52; cubic wh.; s.g. 5.2; m.p. 656; s.w.

timony oxide (valentinite). Sb_2O_3; m.w. 291.52; rhomb. col.; s.g. 5.67; m.p. 656; b.p. 1550; s.w.

timony oxide, penta-. Sb_2O_5; m.w. 323.52; yel. powd.; s.g. 3.78; m.p. −O 380; b.p. −2O 930; i.w.

timony oxide, tetra-. Sb_2O_4; m.w. 307.52; wh. powd.; s.g. 3.8-4.0; m.p. −O, 930.; i.w.

timony oxychloride (ous). SbOCl; m.w. 173.22; monocl. wh.; i.w.

timony oxychloride (ic). $SbOCl_3$; m.w. 244.13; yel.; i.w.; s.al.

timony oxychloride. $Sb_4O_5Cl_2$; m.w. 637.95; col.; s.g. 5.01; s.w.

timony, pentamethyl-. $Sb(CH_3)_5$; m.w. 196.88; b.p. 96-100; i.w.; s.al.

timony potassium tartrate. See potassium antimonyl tartrate.

timony red. See antimony sulfide, tri-.

timony salt. A mixture of SbF_3 with either NaF or $(NH_4)_2SO_4$.; wh. cryst.; s.w.; mordant in dyeing and printing textiles.

timony selenide. Sb_2Se_3; m.w. 481.12; gray; m.p. 611; s.w.

timony sulfate. $Sb_2(SO_4)_3$; m.w. 531.70; wh. powd. deliq.; s.g. 3.625 $^{\frac{1}{4}}$; i.w.

timony sulfide. See antimony sulfide, penta- or tri-.

timony sulfide, golden. See antimony sulfide, penta-.

timony sulfide, penta-. Sb_2S_5 (exist. quest.); m.w. 403.82; or.-yel. powd.; s.g. 4.120; i.w.; i.al.

timony sulfide, tri-(stibnite). Sb_2S_3; m.w. 339.70; rhomb. blk.-or. red; s.g. 4.64; m.p. 550.

timony sulfuret. See antimony sulfide, tri-.

timony tartrate. $Sb_2(C_4H_4O_6)_3 \cdot 6H_2O$; m.w. 795.71; wh. cr. powd.; s.w.

timony telluride. Sb_2Te_3; m.w. 626.02; gray; m.p. 629.

timony thioglycollamide. $Sb(S \cdot CH_2CO \cdot NH_2)_3$; m.w. 392.06; cr.wh.; m.p. 139; s.w.; s.al.

timony, triethyl-. $Sb(C_2H_5)_3$; m.w. 208.88; liq.; s.g. 1.324 ^{15}; m.p. < −29; b.p. 159.5; i.w.; s.al.

timony, trimethyl-. $Sb(CH_3)_3$; m.w. 166.83; liq.; s.g. 1.523 ^{15}; b.p. 80.6; s.w.; i.al.

timony yellow. See lead antimonate.

timonyl sulfate, basic. $(SbO)_2SO_4 \cdot Sb_2(OH)_4$; m.w. 683.13; wh.; i.al.

timonyl sulfate, normal. $(SbO)_2SO_4$; m.w. 371.58; wh.; sp.gr. 4.89.

tinode. Space of maximum vibratory amplitude in a stationary wave system.

antioxidant. Material which prevents or slows down oxidation, e.g. phenyl naphthylamines.

antioxygen. See antioxidant.

antipodes. The two components of a racemic mixture; any two opposites in quality or attributes.

antipyretic (febrifuge). Drug which reduces fever.

antipyrine (1, 5-dimethyl-2-phenyl-3-pyrazolone; analgesine; phenazone). $N(CH_3)N(C_6H_5)COCH{:}C(CH_3)$; m. w. 188.11; leaf. or sc.f.et., bz. or w.; m.p. 114; b.p. 319 ^{174}; s.w.; s.al.

antipyrine chloral hydrate. See hypnal.

antipyrine, dimethylamino. See pyramidone.

antipyrine, salicylate. See salipyrine.

antiscorbutic. Remedial or preventive for scurvy, e.g. vitamin C.

antiscorbutin. See l-ascorbic acid.

antisepsin. See acetanilide, p-bromo-.

antiseptic. Chemical agent that kills or inhibits infectious bacteria on or in living bodies, e.g. phenol.

antiserum. A preparation from blood of animals, usually blood serum, which contains specific immune bodies.

antiskinning agent. Substance which, when added to a varnish in a closed container, prevents formation of a dried film on surface of varnish.

antitoxins. Immunizing or neutralizing substances produced in the blood to combat the toxins that may enter by injection or infection.

antizymotic. A substance that prevents fermentation.

Antonow's rule. The interfacial tension of two liquids in equilibrium equals the difference between the surface tensions.

Antwerp blue. A low grade Prussian blue pigment, consisting essentially of a mixture of iron and zinc ferrocyanides.

apatite (fluorapatite, asparagus-stone). A mineral, $CaF_2 \cdot 3Ca_3(PO_4)_2$; hex., br., grn., gray, yel., red or wh.; sp.gr. 3.151-3.270; hardness 4-5; see also calcium phosphate-fluochloride, ortho-.

Apco 125. Petroleum solvent; b.p. 162.8-202.2.

Apco thinner. V.M.&P. naphtha with a distillation range of 116-143.

aperiodic (dead beat). Without resonant frequencies or natural periods of vibration.

apertometer. Device for measuring numerical aperture of microscope objectives.

aperture angle. Angle formed by radius of entrance-pupil of an optical instrument at the (axial) object-point.

aperture, numerical. See numerical aperture.

aphrodine. See Yohimbine.

aphrodisiac. Capable of remedying functional impairment of genital glands and organs, due to fatigue, endocrine imbalance or involution processes of premature senility; drug which excites sexual desire.

aphthitalite. See arcanite.

apiol. See apiole.

apiole (2, 5-dimethoxysafrole; apiol; parsley camphor). $CH_2{:}CHCH_2{\cdot}C_6H(OCH_3)_2(CH_2O_2)$; m.w. 222.11; col. need.; m.p. 29.5; b.p. 294; s.w.; s.al.

aplanatic. Without spherical aberration.

apoatropine, (atropamine). $C_{17}H_{21}NO_3$; m.w. 271.17; wh. pr.; m.p. 62; s.w.; s.al.

apoatropine, hydrochloride. $C_{17}H_{21}NO_2 \cdot HCl$; m.w. 307.64; col. cr.; m.p. 237-9; s.w.; s.al.

apochromat. Type of photographic and microscopic objectives with highest degree of color correction.

apochromatic objective. Lens of fluorite and optical glasses which produce coincident images for light of the different wave lengths.

apocodeine. $C_{18}H_{19}NO_2$; m.w. 281.16; pl. f.al.; s.w.; s.al.

apomorphine. $C_{17}H_{17}NO_2$; m.w. 267.14; wh. pr. f.et.; turns grn. in air; s.w.; s.al.

apomorphine, hydrochloride. $C_{17}H_{17}NO_2 \cdot HCl$; m.w. 303.61; monocl. pr.; grn. on expos. to lt.; s.w.; s.al.

apophyllite. A mineral, $K_2O \cdot 8CaO \cdot 16SiO_2 \cdot 16H_2O$; tetr., col. or wh., grn., yel. or redsh.; sp.gr. 2.3-2.4; hardness 4.5-5.0.

apopino oil. See oil, shiv.

apoquinone. $C_{19}H_{22}N_2O_2 \cdot 2H_2O$; m.w. 346.22; need. f.et.; s.w.; s.al.

aposafranone (10-phenyl-2(10)-phenazinone; benzene indone). $C_6H_4{\cdot}(NC_6H_5)(N)C_6H_3{:}O$; m.w. 272.11; dk. red. met. cr.; m.p. 242; s.w.; s.al.

apothecary symbols. *See separate section containing apothecary symbols.*

apricot kernel oil. An edible oil obtained from apricot kernels; used in perfumery for adulterating or wholly substituting the more expensive almond oil. The commercial "almond oil, French," is practically pure apricot kernel oil, or a mixture of the latter with peach kernel oil.

apparent density. See density, apparent.

apparent reflectance. See reflectance, apparent.

apple of Peru. See stramonium.

apse (apsis). Point on a central orbit at which radius vector has a minimum or maximum value.

apsis. See apse.

aqua. Latin for "water."

aqua ammonia. See ammonium hydroxide.

aqua fortis. See nitric acid.

aqua regia. A mixture of four parts of hydrochloric acid with one part of nitric acid. The solvent action on gold and similar metals is due to free chlorine.

Aquadag. A colloidal solution of deflocculated Acheson graphite in water, used as a lubricant.

Aquagel. Colloidal bentonite drilling mud ingredient.

aquamarine. See beryllium aluminum silicate.

Aquaplex. Synthetic alkyd resin dispersed in aqueous medium, used on porous surfaces.

Aquaresin. Complex water soluble resin; modified glycerol and glycol bori-borates.

Aquasec. See Aquatec.

Aquasol. Highly sulfonated castor oil.

Aquatec (Aquasec; Proofit). Paraffin wax emulsion with or without aluminum acetate; waterproofing for textiles.

aquation. The change from the acido to the aquo form of a substance.

aqueous. Watery.

aquo-ammono acid. Acid belonging to both oxygen and nitrogen systems, e.g. $CH_3C(NH)OH$.

aquo-ammono ester. Alkyl or aryl derivative of aquo-ammono acids, e.g. methyl urea.

aquo-ammono salt. Salt of aquo-ammono acid (q.v.), e.g. CH_3COHNK.

aquo-basic salt. Salt formed from certain salts by hydrolysis in water, e.g. aquobasic lead chloride, HO—Pb—Cl.

aquolysis. Conversion of petroleum oil, by water, to lighter products such as gas.

arabic gum. See gum arabic.

dl-arabinose (pectinose). $C_5H_{10}O_5$; m.w. 150.08; col. rhomb.; m.p. 164.5; s.w.; s.al.

α-arabinose (d or l). $C_5H_{10}O_5$; m.w. 150.08; rhomb. pr.; m.p. 159.5; s.w.; s.al.

arabinose, diphenylhydrazone. $C_5H_{10}O_4{\cdot}NN(C_6H_5)_2$; m.w. 316.17; col. need.; m.p. 197-204; s.w.; s.al.

arabite. See d-arabitol.

d-arabitol (arabite; 1, 2, 3, 4, 5-pentanepentol [one form]). $C_5H_7(OH)_5$; m.w. 152.09; col. warts or pr.; m.p. 103; s.w.; s.al.

arabonic acid (α, β, γ, δ-tetrahydroxyvaleric acid [one form]). $CH_2OH{\cdot}(CHOH)_3COOH$; m.w. 166.08; cr. or syrup.; m.p. 89; s.w.

arachic acid. See arachidic acid.

arachic alcohol. See 1-eicosanol.

arachidic acid (eicosanoic acid; arachic acid; n-eicosoic acid). $CH_3(CH_2)_{18}COOH$; m.w. 312.31; lust. sc.; m.p. 76.3; b.p. 328; i.w.; s.al.

arachidic acid, ethyl ester. $C_{19}H_{39}COOC_2H_5$; m.w. 340.34; cr.; m.p. 50; b.p. 295-7 ^{100}; i.w.; s.al.

arachidic acid, methyl ester. $C_{19}H_{39}COOCH_3$; m.w. 326.33; cr.; m.p. 54.5; b.p. 286 ^{100}; i.w.; s.al.

arachin (triarachin). $C_3H_5(O \cdot C_{20}H_{39}O)_3$. Compound occurring in arachis oil and, in smaller quantities, in rape oil and butter fat.

arachis oil. See oil, peanut.

aragonite. A mineral; $CaCO_3$; rhomb., col., wh., yel., redsh., blsh. or blk.; sp.gr. 2.85-2.94; hardness 3.5-40.

Arago spot. Bright point at center of shadow of a sphere or other body casting a circular shadow in light from a point source.

Aratone-270. A finely reduced mica for use as a pigment in the manufacture of paints, possessing good weathering properties and non-reactive to chemical fumes.

arbutin (arbutoside). $C_{12}H_{16}O_7$; m.w. 272.12; col. silky need.; m.p. 195; s.w.; s.al.

arbutoside. See arbutin.

arcanite (aphthitalite; glaserite). A mineral; $(K,Na)_2SO_4$; rhbdr., wh.; sp.gr. 2.662.

archil. A natural coloring matter obtained from lichens. It contains orcin $C_6H_3(CH_3)(OH)_2$.

Archimedes' principle. The resultant pressure of a fluid on a body immersed in it acts vertically upward thru the center of gravity of the displaced fluid and is equal to the weight of the fluid displaced.

area, specific. Total area of all the particles in a gram of material.

areal moment of inertia. Surface integral of products of elements of a plane area and squares of their respective distances from a reference axis in the plane of the figure.

areca nut. A nut obtained from certain species of palms, containing a red coloring matter (areca red). The ground nut is used as a remedy for tapeworm.

areca red. See areca nut.

arecaidine, arecaine (1-methyl-guvacine; 1, 2, 5, 6-tetrahydro-1-methyl-nicotinic acid). $C_7H_{11}NO_2 \cdot H_2O$; m.w. 159.11; s.w.; i.al.

arecaidine, methyl ester. See arecoline.

arecaine. See arecaidine.

arecoline (arecaidine methyl ester; methyl 1, 2, 5, 6-tetrahydro-1-methyl-nicotinate). $C_8H_{13}NO_2$; m.w. 155.11; oily alk. liq.; b.p. 220; s.w.; s.al.

arecoline, hydrobromide. $C_8H_{13}NO_2 \cdot HBr$; m.w. 236.03; pr. f.al.; m.p. 168; s.w.; s.al.

arecoline, hydrochloride. $C_8H_{13}NO_2 \cdot HCl$; m.w. 191.57; wh. cr.; m.p. 158; s.w.; s.al.

Areskap. A monobutyl phenyl phenol sodium sulfonate used as a penetrant in textiles, an embalming penetrant and in fruit washing.

Aresket. A monobutyl diphenyl sodium monosulfonate used as a wetting and spreading agent in insecticides.

Aresklene. A dibutyl phenyl phenol sodium disulfonate used in emulsifying oils and fats, as a mold lubricant and penetrant and as a latex conditioner.

argentiferous copper-glance. See stromeyerite.

argentite (silver glance). A mineral; Ag_2S; cub., dk. lead gray; sp.gr. 7.24-7.40; hardness 2.0-2.5.

argento-cuprous sulfide. See stromeyerite.

argilla. See clay.

d-arginine (d-α-amino-δ-guanidovaleric acid) $NH_2C(:NH)NH(CH_2)_3$-

$CH(NH_2)COOH$; m.w. 174.14; pr. f.w.; pl. f. al.; s.w.; i.al.

dl-arginine (dl-α-amino-δ-guanidovaleric acid; dl-Nδ-guanylornithine). $NH_2C(:NH)NH(CH_2)_3CH(NH_2)COOH$; m.w. 174.14.

d-arginine, flavianate. $C_6H_{14}N_4O_2 \cdot C_{10}H_8N_2O_8S$; m.w. 488.26; or. pl.; s.w.; s.al.

d-arginine, picrate. $C_6H_{14}N_4O_2 \cdot C_6H_3N_3O_7 \cdot 2H_2O$; m.w. 439.22; yel. need.; s.w.; i.al.

argols (wine lees; crude cream of tartar). $KH(C_4H_4O_6)$; a brown-red solid formed by the crusting of wine; s.w.; used in manufacture of tartaric acid, tartrates; a mordant and fertilizer.

argon. A; m.w. 39.944; col. inert gas; d. 1.784° g/l; s.g. lq. 1.40^{-186}, m.p. −189.2; b.p. −185.7; one of the rare gases, totally unreactive chemically; occurring in air, from which it is prepared, to the extent of 0.8%; recognized by characteristic red spectrum lines; used for filling incandescent electric lamps.

Argyrol. A substance containing 20-30 per cent. silver generally believed to be in the form of silver oxide with protein as a colloid protective; s.w. and glycerin; i.al.; used in medicine.

aridyne. Measure of drying power of drying oils.

arithmetical progression. See progression, arithmetical.

arm. Portion of a lever between knife-edge of any pivot (in a scale) and knife-edge of the fulcrum pivot.

armature. Revolving part of a dynamo.

armature reaction. Distortion of magnetic flux produced by current in conductors of armature.

Armenian bole. See iron oxide, Fe_2O_3.

arnatto. See annatto.

arnica. A tincture used for bruises and sprains; containing the dried flower head of Arnica montana Linné.

Arochlor. A chlorinated diphenyl resin; a commercially used introfier (q.v.).

aromatic. Term applied to the heterocyclic organic series, benzene series, or compounds of such series.

arrack. An Arabian liquor obtained from rice, coconuts, or a mixture of the two.

arrest point. Temperature at which rate of change of temperature, in heated metal or alloy, is uniform because of an internal structural change.

arrow root (maranta). A starch obtained from the roots of Maranta genus; used in food preparations, glues, starches, face powders, laundrying, etc.

arsanilic acid (p-aminobenzenarsonic acid; p-aminophenylarsinic acid). $NH_2C_6H_4AsO(OH)_2$; m.w. 217.00; wh. need.; m.p. 232; s.w.; s.al.

arsenate. Term applied to a salt containing the trivalent group $AsO_4^{\equiv}$, e.g. lead arsenate $Pb_3(AsO_4)_2$.

arsenic. As; at. wt. 74.91; at. no. 33; m.p. sublimes (500° C. m.p. under pressure); b.p. 615; sp.gr. 5.73; valence 3 or 5; amorph. form; sp.gr. 3.70; a semi-metallic element, rarely found free; occurring as realgar, As_2S_2, and as arsenical pyrites, FeAsS; steel gray, brittle, crystalline; subliming on heating, and depositing partly crystals, partly a black amorphous solid; used in bronzing, pyrotechny, and preparation of gunshot alloy.

arsenic, native. The element as it occurs naturally; hex., tin-wh., tarn. dk. gray to blk.; sp.gr. 5.64-5.78; hardness 3-4.

arsenic acid, meta-. $HAsO_3$; m.w. 123.94; wh. cr.

arsenic acid, ortho-. $H_3AsO_4 \cdot \frac{1}{2}H_2O$; m.w. 150.96; wh. translu. cr., hyg.; s.g. 2.0-2.5; m.p. 35.5; b.p. $-H_2O$, 160; s.w.; s.al.

arsenic acid, pyro-. $H_4As_2O_7$; m.w. 265.89; col. cr.

arsenic, bisdiethyl-. See biarsine, tetraethyl-.

arsenic bromide (ous). $AsBr_3$; m.w. 314.68; pr. col.-yelsh.; hyg.; s.g. 3.54^{25}; m.p. 32.8; b.p. 221.

arsenic chloride, (ic). $AsCl_5$; m.w. 252.22; col.; m.p. −40.

arsenic chloride, (ous). $AsCl_3$; m.w. 181.30; oily liq. or need.; s.g. liq. 2.163; m.p. −18; m.w. 130.2; s.al.

arsenic, chloride, di-, methyl-. See arsine, dichloromethyl-.

arsenic chloride, mono-, dimethyl- (cacodyl chloride; arsine, chlorodimethyl-). $(CH_3)_2AsCl$; m.w. 140.43; col. liq.; m.p. < -45; b.p. 106.5; i.w.; s.al.

arsenic chloride, tri-, dimethyl- (cacodyl trichloride). $(CH_3)_2AsCl_3$; m.w. 211.35; cr. f.et.

arsenic, dimethyl-. See arsine, tetramethyl bi-.

arsenic fluoride (ic). AsF_5; m.w. 169.93; gas, ĉol.; d. 7.71 g/l; m.p. −80; b.p. −53; s.w.; s.al.

arsenic fluoride (ous). AsF_3; m.w. 131.93; oily liq.; s.g. liq. 2.666; m.p. −8.5; b.p. 63^{752}; s.al.

arsenic hydride (solid). As_2H_2; m.w. 151.88; brn. masses; i.w.; i.al.

arsenic hydride (ous) (arsine). AsH_3; m.w. 77.95; gas, col.; s.g. 3.484; m.p. −113.5; b.p. −55; s.w.; s.al.

arsenic iodide (ic). AsI_5; m.w. 709.53; s.g. 3.93; m.p. 67.

arsenic iodide (ous). AsI_3; m.w. 455.69; hex., red.; s.g. 4.39^{15}; m.p. 146; b.p. 403; s.al.

arsenic iodide, di-. AsI_2; m.w. 328.77; red prisms; s.al.

arsenic nickel. See niccolite.

arsenic oxide (ous) (arsenolite). As_2O_3; m.w. 197.86; col., cubic or fibrous; s.g. 3.865^{25}; s.w.; s.al.

arsenic oxide (ous) (claudetite). As_2O_3; m.w. 197.86; monocl. col.; s.g. 3.86; s.w.; s.al.

arsenic oxide (ous) (amor. or vitreous). As_2O_3; m.w. 197.86; amor. or vitreous; s.g. 4.15; s.w.

arsenic oxide, bisdimethyl- (cacodyl oxide, alkarsin, alkarsine). $[(CH_3)_2As]_2O$; m.w. 225.95; col. liq.; m.p. −25; b.p. 145-51; s.w.; s.al.

arsenic oxide, methyl- (methyl arsinoxide). CH_3AsO; 105.95; pr. f. CS_2; m.p. 95; s.al.

arsenic oxide, penta-. AsO_5; m.w. 229.86; amor. wh.; s.g. 4.086; s.w.; s.al.

arsenic oxide, tri-. See arsenic oxide (ous).

arsenic oxychloride (ous). AsOCl; m.w. 126.39; brnsh.

arsenic phosphide (ous). AsP; m.w. 105.95; br. red. powd.; i.al.

arsenic red. See arsenic sulfide, di-.

arsenic selenide (ous). As_2Se_3; m.w. 387.46; br. cryst.; s.g. 4.75; m.p. 360; i.w.

arsenic sulfide (ous) (orpiment). As_2S_3; m.w. 246.04; monocl., yel. or red.; s.g. 3.43; m.p. 300; b.p. 707; s.w.; s.al.

arsenic sulfide, bi-. See arsenic sulfide, di-.

arsenic sulfide, di- (realgar). As_2S_2; m.w. 213.98; monocl. red-br.; s.g. $\alpha 3.506^{19}$, $\beta 3.254^{19}$; m.p. tr. 267, $\beta 307$; b.p. 565; i.w.

arsenic sulfide, bisdimethyl- (cacodyl sulfide). $[(CH_3)_2As]_2S$; m.w. 242.01; oil; b.p. 211; s.w.; s.al.

arsenic sulfide, penta-. As_2S_5; m.w. 310.16; yel.; i.w.

arsenic sulfide, red. See arsenic sulfide, di-.

arsenic, trimethyl, di-. See arsine, tetramethyl bi-.

arsenic, triethyl-. See arsine, triethyl-.

arsenic, white. See arsenic oxide (ous).

arsenic yellow. See arsenic sulfide (ous).

arsenious. See under corresponding arsenic compound.

arsenious chloride, diphenyl-. See arsine, chlorodiphenyl-.

arsenious oxide. See arsenic oxide.

arsenite. Term applied to a salt containing the trivalent group $AsO_3^{\equiv}$, e.g. potassium arsenite, K_3AsO_3.

arsenobenzene, 3, 3′-diamino-4, 4′-dihydroxy-, dihydrochloride. See arsphenamine.

arsenobenzol. See arsphenamine.

arsenolite. See arsenic oxide (ous) (arsenolite).

arsenopyrite (mispickel). A mineral; $FeS_2 \cdot FeAs_2$; rhomb., silver-wh. to grayish-wh.; sp.gr. 5.89-6.20; hardness 5.5-6.0.

-arsine. Suffix for radical $—AsH_2$. Compare with arseno- (Prefixes of Organic Radicals).

arsine. See arsenic hydride (ous).

arsine, chlorodimethyl-. See arsenic, chloride, mono-, dimethyl-.

arsine, chlorodiphenyl- (diphenylchloroarsine; diphenylarsenious chloride; blue cross; sneezing gas). $(C_6H_5)_2AsCl$; m.w. 264.47; rhomb. pl.; m.p. 44; s.w.; s.al.

arsine, dichloromethyl- (methylarsenic dichloride; methyldichloroarsine). CH_3AsCl_2; m.w. 160.87; col. liq.; m.p. −59; b.p. 133; s.w.; s.al.

arsine, diethyl-. $[As(C_2H_5)_2]_3$; m.w. 266.02 liq.; s.g. 1+; b.p. 186; i.w.; s.al.

arsine, dimethyl-. $[As(CH_3)_2]_3$; m.w. 209.95; col. liq.; s.g. 1.15; b.p. 150; i.w.; s.al.

arsine, dimethyl- (cacodyl hydride). $(CH_3)_2AsH$; m.w. 105.98; col. liq., ign. in air; b.p. 36; s.al.

arsine, ethyl- (arsinoethane). $C_2H_5AsH_2$; m.w. 105.98; col. liq.; b.p. 36.; s.w.; s.al.

arsine, methyl-. CH_3AsH_2; m.w. 91.97; col. liq. or gas; b.p. 2; s.w.; s.al.

arsine, methyl dichloro-. See arsine, dichloromethyl-.

arsine, tetraethyl bi- (ethyl cacodyl; bis[diethyl arsenic]). $(C_2H_5)_2AsAs(C_2H_5)_2$; m.w. 266.02; liq.; sp.gr. 1.139; b.p. 185-90; s.al., i.w.

arsine, tetramethyl bi- (cacodyl; diarsenic trimethyl; arsenic dimethyl). $(CH_3)_2AsAs(CH_3)_2$; m.w. 209.95; col. oil; m.p. −6; b.p. 170; s.w., s.al.

arsine, triethyl- (arsenic triethyl). $(C_2H_5)_3As$; m.w. 162.05; col. liq. i.w.; s.al.

arsine, trimethyl-. $(CH_3)_3As$; m.w. 120.00; col. liq.; b.p. 52.8; s.w.; s.al.

arsinic acid. Organic compound of quinquivalent arsenic, e.g. $p\text{-}H_2N\text{-}C_6H_4\text{-}AsO(OH)_2$.

arsinic acid, p-aminophenyl-. See arsanilic acid.

arsinic acid, dimethyl- (cacodylic acid; alkargen). $(CH_3)_2AsO_2H$; m.w. 137.98; col. tricl.; m.p. 200; s.w., s.al.

arsinic acid, methyl-. See methane arsonic acid.

arsinoxide, methyl-. See arsenic oxide, methyl-.

arsonation. Introduction of arsenic in an organic compound where it is directly attached to a nuclear carbon atom.

arsonic acid, methane. See methane arsonic acid.

arsphenamine (3, 3′-diamino-4, 4′-dihydroxy-arsenobenzene dihydrochloride; salvarsan; arsenobenzol; "606"). $C_{12}H_{12}As_2N_2O_2 \cdot 2HCl \cdot 2H_2O$; m.w. 474.93; hyg. yel. powd.; s.w.; s.al.

arthrospore. A spore formed from the entire cell.

Artic. Methyl chloride used for refrigeration units.

articulated. Jointed.

Artifex. Synthetic tar-acid resin.

artificial musk. See toluene, 3-tert.-butyl-2, 4, 6-trinitro-.

artificial silk. See silk, artificial.

aryl. Denoting a hydrocarbon radical of the benzene series after the removal of one hydrogen atom, e.g. phenyl, $C_6H_5^-$.

Arylene. A sulfonated aromatic compound used as a wetting agent in the textile industry.

asafetida. Dried juice of the roots of an Asian plant, used in medicine as a nervous stimulant and antispasmodic.

asaron. See benzene, 1, 2, 4-trimethoxy-5-propenyl-.

asaronic acid (2, 4, 5-trimethoxybenzoic acid). $(CH_3O)_3C_6H_2COOH$; m.w. 212.09; need. f. al.; m.p. b.p. *ca.* 300; s.w.; s.al.

Asbestine. A fibrous variety of (hydrated magnesium silicate) u in paints.

asbestos. A term applied to m fibrous silicate minerals, all p thermal conductors and resistant chemical attack. Examples chrysotile, tremolite, anthophyll amosite, and crocidolite (q.v.).

asbestos roving. See roving, asbest

asbolane. A mineral containing m ganese dioxide and oxide of cob $(CoMn)O \cdot 2MnO_2 \cdot 4H_2O$.

Ascarite. Sodium hydroxide-asbes absorbent for carbon dioxide.

ascomycetes (sac fungi). Class fungi including yeasts and powd mildews.

l-ascorbic acid (vitamin C; a scorbutin). $C_6H_8O_6$; m.w. 176.0 wh. cr. powd.; m.p. 192; s.w.; s.a prevents scurvy and is important f the normal growth of bones and teet excellent sources are orange a lemon juice, raw fruits, vegetables a canned tomatoes and pineapple.

-ase. Suffix used for designating e zymes, e.g. amylase.

asepsin. See acetanilide, p-bromo-.

asepsis. Absence of microörganisms septic material.

Aseptoform. One of a series of alk esters of p-hydroxybenzoic aci antiseptic.

aseptol. See 1-phenol-2-sulfonic aci

asexual. Not sexual.

ash. That portion of matter remainin after a substance is heated strongl or burned.

asparacemic acid. See dl-aspartic aci

l-aspartic acid (l-aminosuccinic acid; l-β-asparagine. $NH_2COCH_2CH(NH_2)COOH$; m.w. 132.08; col. rhomb.; s.w. s.al.

asparaginic acid. See aspartic acid.

asparagus-stone. See apatite.

d-aspartic acid (d-aminosuccinic acid) $COOHCH_2CH(NH_2)COOH$; m.w 133.06; m.p. 251.

dl-aspartic acid (dl-aminosuccinic acid asparacemic acid). $COOHCH_2CH(NH_2)COOH$; m.w. 133.06; monocl pr.; s.w.; s.al.

l-aspartic acid (l-aminosuccinic acid) $COOHCH_2CH(NH_2)COOH$; m.w 133.06; col. rhomb. leaf.; m.p. 269-71 s.w.; i.al.

aspergillus. A genus of small fungi o molds used in industry to ferme carbohydrates to produce citric an other organic acids.

asphalt. Natural or mechanical mixtur of solid or viscous bitumens with iner mineral matter.

asphalt, blown. Rubbery bodies ob tained by blowing air at high tempera ture through mineral residual oils.

asphalt, oil. See oil asphalt.

asphalt, petroleum. See petroleu asphalt.

asphalt, soft. See diasphaltene.

asphaltene. Component of bitume which is soluble in carbon tetrachlorid or carbon disulfide but insoluble i petroleum ether.

asphaltite. A species of bitumens solub in carbon bisulfide but difficult fusible.

asphaltum. See asphalt.

asphaltum, gum. See gum asphaltum

asphyxiant. A substance producin suffocation.

aspidospermine. $C_{22}H_{30}N_2O_2$; m.w 354.25; need. f.al. or pet. eth.; m.p 208; s.w.; s.al.

aspirator. A device for aspirating current of gas by suction through liquid.

aspirin (acetylsalicylic acid; salicyl acid acetate; o-acetoxybenzoic acid $CH_3COOC_6H_4COOH$; m.w. 180.0 col. need. f.w.; m.p. 133-5; s.w.; s.a

assaying. Quantitative determinatio of the metal content of ores.

associated liquid. One showing ab

ormal physical properties due to ormation of aggregates of simple olecules to give an easily dissociated omplex, e.g. water, liquid ammonia.

atic. Coming to rest indifferently vithout any certain orientation.

er lake. Red lake pigment having igh oil absorption properties, rhodamine tungstate compound.

hma weed. See lobelia.

igmatism. Error of spherical lenses peculiar to the formation of images by oblique pencils.

ton dark space (primary dark space). Thin dark space between cathode glow and cathode in a cathode ray tube.

trolith. Special lithopone.

trophysics. Physics of astronomy.

ymmetric carbon atom. One having its four valencies, which go from the center to the four corners of a regular tetrahedron, held by four different atoms or groups of atoms. Compounds possessing asymmetric carbon atoms have optically active isomers.

ymmetry. Molecule which can have two or more forms which differing only as any object differs from its mirror reflection.

ymptote. A straight line which continually approaches a curve and meets it at infinity.

acamite. A mineral, $3CuO \cdot CuCl_2 \cdot 3H_2O$; rhomb., bright or blksh. grn.; sp.gr. 3.77-3.94; hardness 3.0-3.5.

ate. Suffix denoting a salt of an -ic acid, e.g. potassium chlorate, $KClO_3$.

thermanous. Opaque to infra-red rays.

tisine. $C_{22}H_{31}NO_2$; m.w. 341.25; col. varnish; m.p. 85; s.w.; s.al.

tisine, hydrochloride. $C_{22}H_{31}NO_2 \cdot HCl$; m.w. 377.71.; pr. m.p. 296; s.w.; s.al.

tmolysis. The separation of admixed gases by means of a porous partition. Use is made of the different speeds at which the gases diffuse.

tmosphere (atm.). The gaseous envelope surrounding the earth; the pressure of 760 mm. of mercury; in European engineering, the pressure of 1000 g. per sq. cm.

tmosphere, standard (for textile materials). Air maintained at a relative humidity of 65 per cent. at 70° F. (21° C.).

tom. The smallest unit quantity of an element that is capable of entering into chemical combination. It has a very small, dense, positively charged nucleus which is composed of protons and neutrons and in which almost the whole mass of the atom is concentrated. Surrounding the nucleus are electrons moving about it in elliptical and circular orbits in comparatively empty space.

tom form factor (atomic scattering factor; atomic structure factor; f-value). Quantity in the expression for intensity of an x-ray beam reflected by a crystal, whose value is dependent on the varying configuration of the electrons in the crystal atoms relative to the center of the atom, as well as on the incident angle and the wave length of the x-rays.

tomic absorption coefficient. Ratio of absorption coefficient of an element to the number of atoms per unit volume.

tomic compound. One which gives two atoms as products of dissociation when in the fundamental state.

tomic domain. One of the most simple space-filling polyhedrons containing contacting spheres representing the atoms in a crystal.

tomic frequency. Natural vibrational frequency of atoms in a solid and associated with the latter's elastic constants.

tomic heat. Product of the atomic weight and the specific heat.

tomic number. The number of the position of an element in the New Periodic Series with hydrogen as number 1; the number of electrons possessed by the element; also equal to the number of free protons in the nucleus or the total positive charge on the nucleus.

atomic refraction. Specific refractive power of an element multiplied by its atomic weight.

atomic rotatory power. See rotatory power, atomic.

atomic scattering coefficient. Scattered electron current per unit solid angle, in any direction, per atom of scattering material, per unit incident electron current.

atomic scattering factor. See atom form factor.

atomic susceptibility. Product of specific or mass susceptibility of an element and its atomic weight.

atomic structure factor. See atom form factor.

atomic volume. The atomic weight divided by the specific gravity.

atomic wave function. See orbital.

atomic weight. Relative weight of an atom of an element as compared with the weight of one atom of oxygen taken as 16.

atomic weight, gram. See gram atom.

atomicity. Number of atoms in a molecule of an element.

atophan. See cinchophen.

atrichous. Without flagella.

dl-atrolactic acid (dl-α-phenyllactic acid; dl-α-hydroxyhydratropic acid; dl-atrolactinic acid). $CH_3C(C_6H_5)(OH)\text{-}COOH$; m.w. 166.08; rhomb.; m.p. $\frac{1}{2}H_2O$ 90, anh. 93; s.w.

dl-atrolactinic acid. See dl-atrolactic acid.

atropamine. See apoatropine.

atropic acid (α-phenyl acrylic acid; α-methylene-α-toluic acid). $CH_2\text{:}C(C_6H_5)COOH$; m.w. 148.06; col. monocl.; m.p. 106-7; s.w.; s.al.

atropine (dl-hyoscyamine; dl-daturine, tropic acid tropine ester). $C_{17}H_{23}NO_3$; m.w. 298.19; col. rhomb. pr. or need.; m.p. 115.5; s.w.; s.al.

atropine, chloroaurate. $C_{17}H_{23}NO_3H \cdot AuCl_4$; m.w. 629.22; leaf. or glist. powd.; m.p. 135-7; s.w.

atropine, sulfate. $(C_{17}H_{23}NO_3)_2 \cdot H_2SO_4$; m.w. 676.45; col. need. or wh. cr. powd.; m.p. 183-4.5, anh.; s.w., s.al.

atropine, valerate. $C_{17}H_{23}NO_3 \cdot C_5H_{10}O_2 \cdot H_2O$; m.w. 409.28; wh. crusts.; m.p. 42; s.w.; s.al.

atroscine. See i-scopolamine.

attar of roses (otto of roses). An oil obtained by distilling the fresh flowers of a species of rose cultivated in Europe; the odorous portion consists chiefly of geraniol and citronellol.

attenuation. The weakening of bacterial life; falling off of flux density with distance from source.

attenuation factor (transmission factor). Measure of permeability of a layer of an absorbing medium for an emission travelling on it.

aubepine. See anisaldehyde.

audio frequency. Rate of audible change of electric current.

Auer metal (sparking metal). An alloy of iron and cerium earth metals; used in automatic gas and cigar lighters to produce a spark.

auerlite. Mineral silicophosphate of thorium, $3ThO_2 \cdot (3SiO_2 \cdot P_2O_5) \cdot 6H_2O$.

augelite. A mineral; $2Al_2O_3 \cdot P_2O_5 \cdot 3H_2O$; monocl., col. to wh.; sp.gr. 2.77; hardness 4.5-5.0.

Auger effect. Emission of an electron with the ion being left in a normal state, the excess energy appearing as kinetic energy of the ejected atom, occurring when an atom is excited to an electronic state of higher energy than the lowest ionization energy of the normal atom.

augite. A mineral; $CaMg(SiO_3)_2 + (Mg, Fe)(AlFe)_2SiO_6$; monocl., dk. grn. to blk.; sp.gr. 3.2-3.6; hardness 5-6.

augmentation. Oxidation.

auramine (base). (bis[p-dimethylaminophenyl]-methylenimine). $[(CH_3)_2NC_6H_4]_2C\text{:}NH$; m.w. 267.19; yel. leaf. f.al.; m.p. 136; i.w.; s.al.

auramine (dye). (auramine [base] hydrochloride). $[(CH_3)_2NC_6H_4]_2CCl_2\text{:}NH_2Cl \cdot H_2O$; m.w. 321.67; yel. fl.; s.w.; s.al.

auramine (base) hydrochloride. See auramine (dye).

auramine (base), N-methyl-. $[(CH_3)_2NC_6H_4]_2C\text{:}NCH_3$; m.w. 281.20; yel. cr. f. al.; m.p. 130-3; s.w.; s.al.

aureole. Outer portion of an arc which is less luminous or distinct and usually of a different color.

auric acid, bromo-. $HAuBr_4 \cdot 5H_2O$; m.w. 607.95; red-br. cr.; m.p. 27; s.w.; s.al.

auric acid, chloro-. $HAuCl_4 \cdot 4H_2O$; m.w. 412.10; brt. yel. need. deliq.; s.w.; s.al.

aurichacite. $(Zn, Cu)_5(CO_3)_2(OH)_6$; pale bluish-green; sp.gr. 3.54.

auricyanhydric acid. $HAu(CN)_4 \cdot 3H_2O$; m.w. 356.29; tab.; s.w.; s.al.

auriferous. A term applied to ores or minerals containing gold.

aurin, aurine (rosolic acid; pararosolic acid). $C_{19}H_{14}O_3$; m.w. 290.11; red rhomb. need.; s.w.; s.al.

aurin, hexamethoxy-. See eupittone.

austenite. A solid solution of carbon in gamma iron, stable above the thermal critical range of iron-carbon alloys.

authigenous. Term applied to minerals formed in sediment after deposition.

autoassimilation. Process by which certain elements, previously combined in one or more solids formed at higher temperatures, are returned by a remelting process as the temperature is lowered.

autocatalysis. Type of catalysis produced by action of molecules produced by the reaction without the interaction of foreign substances.

autoclastic. Term applied to rocks that have been fractured or broken after formation.

autoclave. A vessel for conducting chemical reactions under high pressures.

autoelectronic emission. See field emission.

autogenesis. Self production.

autogenous bacterin. Bacterial vaccine prepared from the organism causing the infection.

autoionization. Automatic dissociation of a molecule occurring when the sum of its electronic and vibrational energies is greater than its dissociation energy.

autolysis. Hydrolysis by tissue proteases; self digestion.

autophotoelectric. Referring to hypothesis that thermionic emission is a type of photoelectric effect in which the radiation issues from the hot body itself.

autopolypoid. Organism with more than two haploid sets of chromosomes that paired at meiosis and are held together.

autosome. Chromosome other than sex chromosome.

autotransformer. One in which all or part of primary windings are connected differentially in series with the secondary windings.

autotrophic. Class of bacteria which live in inorganic media.

autoxidation (spontaneous oxidation). The addition of a molecule of oxygen to the autoxidized substance and is an action which can be activated photochemically.

autunite (lime uranite). A radioactive mineral; $CaO \cdot 2UO_3 \cdot P_2O_5 \cdot 8H_2O$; rhomb., yel.; sp.gr. 3.05-3.19; hardness 2.0-2.5; a source of uranium and radium.

auxiliary circle. A circle having as its diameter the major axis of an elliptical orbit.

auximone. Plant growth promoting substance, e.g. indole-acetic acid.

auxin. See phytamin.

auxochrome. Group capable of intensifying color when a chromophore (q.v.) is present; group which shifts absorption of ultra violet rays farther into region of lower frequencies (deepening color) when a chromophore is present.

aventurine. A variety of quartz; also, red colors produced by the addition of copper oxide, CuO, to pottery glazes.

Avitex. Series of sulfated higher fatty alcohols used in textile finishing and softening.

avocado oil. See oil, avocado.

Avogadro's hypothesis. Equal volumes of gases, under the same conditions of temperature and pressure, contain the same number of molecules.

Avogadro's number. The number of molecules of a substance in a gram-molecule; 6.06×10^{23}.

axial magnification (depth magnification). Ratio of interval between two adjacent image-points on the axis of an optical instrument to the interval between the corresponding axial object-points.

axial ratio. Length of the arbitrary unit of measure along one axis of a crystal divided by that along another axis.

axial vector. One having rotary action about an axis.

axinite. A mineral; $HCa_2Al_2B(SiO_4)_4$; tricl., br., bl., gray, yel.; sp.gr. 3.22-3.314; hardness 6.5-7.0.

axiom. A self-evident truth.

axis. A central line used as base for geometrical and mechanical relations.

axis, neutral. An axis of no stress.

-aza. Designation for a compound having a hetero nitrogen atom in a ring, e.g. thiazine.

azelaic acid (nonanedoic acid; 1, 7-heptanedicarboxylic acid). $COOH(CH_2)_7COOH$; m.w. 188.12; col. leaf. or need.; m.p. 106.5; s.w.; s.al.

azelaic acid, diethyl ester (ethyl azelate). $CH_2[(CH_2)_3COOC_2H_5]_2$; m.w. 244.19; b.p. 291; i.w.; s.al.

azelate, ethyl. See azelaic acid, diethyl ester.

azeotropic. Referring to a constant boiling (q.v.) mixture where the distillate has the same composition as the substance being distilled.

azeotropiser. Liquid chemical compound which forms azeotropic mixtures with any one member of a series of substances chemically related.

azete, tetrahydro-. See trimethylenimine.

azetidine. See trimethylenimine.

azide. Salt or ester of hydrazoic acid; explosive.

azimethylene. See methane, diazo-.

azimuth. Angle which the vertical plane of a line makes with the meridian plane.

azimuthal quantum number. A quantum number (in angular motion) which must be an integer for any allowed stationary state of a particle moving subject to a central field.

azine (quinoxaline). Derivative of pyrazine or condensation product of an aldehyde with hydrazine.

azirine, dihydro-. See ethylenimine.

azo compound. Compound of general formula $R_1\text{—}N\text{=}N\text{—}R_2$, used in dye manufacture, e.g. azobenzene, $C_6H_5N\text{:}NC_6H_5$.

azo dye. Made by diazotizing an arylamino compound and coupling with an aryl amine or with a phenol or naphthol, e.g. Orange II.

azoacetanilide, p-phenyl-. See azobenzene, p-acetamido-.

azoaniline. See azobenzene, diamino-.

azoaniline, 2-, 3-, or 4-benzene-. See azobenzene, o-, m-, or p-amino-.

azoaniline, N, N-dimethyl-p-phenyl-. See azobenzene, p-dimethylamino-.

azoaniline, o-, m-, or p-phenyl-. See azobenzene, o-, m-, or p-amino-.

azobenzene (diphenyldiimide; azobenzide). $C_6H_5N:NC_6H_5$; m.w. 182.09; or.-red. monocl. leaf.; m.p. 68; b.p. 297.4; i.w.; s.al.

azobenzene, p-acetamido- (p-phenylazoacetanilide). $CH_3CONHC_6H_4N:NC_6H_5$; m.w. 239 [illegible] m.p. 144.

azobenzene, m-am .o- (m-phenylazoaniline; 3-benzeneazoaniline). $NH_2C_6H_4N:NC_6H_5$; m.w. 197.11; or. need.; m.p. 57; i.w.; s.al.

azobenzene, o-amino- (o-phenylazoaniline; 2-benzeneazoaniline). $NH_2C_6H_4N:NC_6H_5$; m.w. 197.11; gold. need.; m.p. 123; i.w.; s.al.

azobenzene, p-amino- (p-phenylazoaniline; 4-benzeneazoaniline). $NH_2C_6H_4N:NC_6H_5$; m.w. 197.11; yel. monocl.; m.p. 126; b.p. >360; s.w.; s.al.

azobenzene, 4-amino-2, 3'-dimethyl-. See m-totuidine, 4-m-tolylazo-.

azobenzene, 4-amino-3, 4'-dimethyl-. See o-toluidine, 4-p-tolylazo-.

azobenzene, 4'-amino-2, 3'-dimethyl-. See o-toluidine, 4-o-tolylazo-.

azobenzene, 2, 2'-diamino- (2, 2'-azodianiline). $H_2NC_6H_4N:NC_6H_4NH_2$; m.w. 212.13; redsh. pl. f.al. or bz.; m.p. 134; s.w.; s.al.

azobenzene, 2, 4-diamino-. See chrysoidine (base).

azobenzene, 4, 4'-diamino- (4, 4'-azodianiline). $H_2NC_6H_4N_2C_6H_4NH_2$; m.w. 212.13; yel. need. f.al.; m.p. 241; s.w.; s.al.

o, o'-, m, m'-, or p, p'-azobenzene dicarboxylic acid. See o-, m-, or p-azobenzoic acid.

o, o'- or p, p'- azobenzene, diethoxy-. See o-, or p-azophenetole.

azobenzene, 2, 2'-, 3, 3'-, or 4, 4'-dihydroxy-. See o-, m-, or p-azophenol.

azobenzene, 2, 2'-, 3, 3'-, or 4, 4'-dimethyl-. See o-, m-, or p-azotolune.

azobenzene, p-dimethylamino-. (N,N-dimethyl-p-phenyl azoaniline). $(CH_3)_2NC_6H_4N:NC_6H_5$; m.w. 225.14; yel. leaf. f.al.; m.p. 117; i.w.; s.al.

azobenzene, 4, 4'-diphenyl-. See p, p'-azobiphenyl.

azobenzene hydrochloride, triamino-. See Bismarck brown.

azobenzene, m-hydroxy-. (m-phenylazophenol). $HOC_6H_4N:NC_6H_5$; m.w. 198.09; yel. pr.f. bz.; m.p. 114-7; s.w.; s.al.

azobenzene, o-hydroxy-. (o-phenylazophenol). $HOC_6H_4N:NC_6H_5$; m.w. 198.09; or. need. f.et.; m.p. 82.5-3.0; s.w.; s.al.

azobenzene, p-hydroxy-. (p-phenylazophenol). $HOC_6H_4N:NC_6H_5$; m.w. 198.09; rhomb. pr. f.al.; m.p. 152; s.w.; s.al.

azobenzene, p-nitro-. $NO_2C_6H_4N:NC_6H_5$; m.w. 227.09; or. red leaf. or need.; m.p. 134; s.al.

azobenzene, 2, 4, 3'-triamino-. See m-phenylene diamine, 4-(3-aminophenylazo)-.

azobenzide. See azobenzene.

azobenzil. See oxazole, triphenyl-.

m-azobenzoic acid. (m, m'-azobenzenedicarboxylic acid). $COOHC_6H_4N:NC_6H_4COOH$; m.w. 270.09; amor. powd. or yel. need.; m.p. 340; s.w.; s.al.

o-azobenzoic acid (o, o'-azobenzenedicarboxylic acid). $COOHC_6H_4N:NC_6H_4COOH$; m.w. 270.09; dk. yel. need. f.al.; s.w.; s.al.

p-azobenzoic acid (p, p'-azobenzenedicarboxylic acid). $COOHC_6H_4N:NC_6H_4COOH$; m.w. 270.09; red. need.; m.p. *ca.* 330; s.w.; s.al.

p, p'-azobiphenyl (4, 4'-diphenylazobenzene; p-azodiphenyl; di-p-xenyldiimide). $C_6H_5C_6H_4N:NC_6H_4C_6H_5$; m.w. 334.1o; or.-red pl. f.bz.; m.p. 249-50; i.w.; i.al.

2, 2'-azo-dianiline. See azobenzene, 2, 2'-diamino-.

4, 4'-azodianiline. See azobenzene, 4, 4'-diamino-.

azodicarbonamide (azoformamide). $NH_2CON:NCONH_2$; m.w. 116.06; or.-red. cr.; s.w.; i.al.

o, o'-azodiphenetole. See o-azophenetole.

p, p'-azodiphenetole. See p-azophenetole.

o- o'-, m, m'-, or p, p'-, azodiphenol. See o-, m-, or p'-azophenol.

p-azodiphenyl. See p, p'-azobiphenyl.

azoformamide. See azodicarbonamide.

azoimide, phenyl-. See benzene, triazo-.

azole. See pyrrole.

1, 1'-azonaphthalene (di-1-naphthyldiimide; α, α'-azonaphthalene). $C_{10}H_7N:NC_{10}H_7$; m.w. 282.13; red need. f. ac.a.; m.p. 190; i.w.; s.al.

1, 2'-azonaphthalene (α-naphthyl-β-naphthyldiimide. $C_{10}H_7N:NC_{10}H_7$; m.w. 282.13; br. leaf. f.ac. a.; m.p. 136; i.w.; s.al.

2, 2'-azonaphthalene (di-β-naphthyldiimide). $C_{10}H_7N:NC_{10}H_7$; m.w. 282.13; red. leaf. f.bz. or chl.; m.p. 208; i.w.; s.al.

1, 1'-azonaphthalene, 4-amino-. See 1-naphthylamine, 4-(1-naphthylazo)-.

o-azophenetole (o, o'-azodiphenetole; o, o'-diethoxyazobenzene). $(C_2H_5O-C_6H_4)_2N_2$; m.w. 270.16; red. pr. f.al.; m.p. 131; i.w.; s.al.

p-azophenetole (p, p'-azodiphenetole; p, p'-diethoxyazobenzene). $(C_2H_5O-C_6H_4)_2N_2$; m.w. 270.16; yel. leaf.; m.p. 160.2; i.w.; s.al.

m-azophenol (m, m'-azodiphenol; 3, 3'-dihydroxyazobenzene). $HOC_6H_4N:NC_6H_4OH$; m.w. 214.09; yel. leaf. f.dil. al.; m.p. 205; s.w.; s.al.

o-azophenol (o, o'-azodiphenol; 2, 2'-dihydroxyazobenzene). $HOC_6H_4N:NC_6H_4OH$; m.w. 214.09; yel. leaf. f.bz. or al.; m.p. 172; i.w.; s.al.

p-azophenol (p, p'-azodiphenol; 4, 4'-dihydroxyazobenzene). $HOC_6H_4N:NC_6H_4OH$; m.w. 214.09; cr. $(+1H_2O)$ f. dil. al.; α anh. grn. powd., β anh. dk. red powd.; m.p. 216; s.w.; s.al.

azophenol, o-, m-, or p-phenyl-. See azobenzene, o-, m-, or p-hydroxy-.

azophor red. See 2-naphthol, 1-p-phenylazo-.

azote. Name first assigned to nitrogen by Lavoisier.

m-azotoluene (3, 3'-dimethylazobenzene; di-m-tolyldiimide). $CH_3C_6H_4N:NC_6H_4CH_3$; m.w. 210.13; or. red rhomb. cr.; m.p. 54-5; i.w.; s.al.

o-azotoluene (2, 2'-dimethylazobenzene; di-o-tolyldiimide). $CH_3C_6H_4N:NC_6H_4CH_3$; m.w. 210.13; red. m. pr. f.et.; m.p. 55; i.w.; s.al.

p-azotoluene (4, 4'-dimethylazobenzene; di-p-tolyldiimide). $CH_3N:NC_6H_4CH_3$; m.w. 210.13; or. monocl. need. f. lgr.; m.p. 144; s.al.

azoxybenzene (ordinary) (azoxybenzide). $C_6H_5(NON)C_6H_5$; m.w. 19 m.p. 36; i.w.; s.al.

azoxybenzene-2, 2'-dicarboxylic See o-azoxybenzoic acid.

azoxybenzide. See azoxybenzene.

m-azoxybenzoic acid (m, m'-azoxydibenzoic acid). $C_6H_4COOH(NON)-C_6H_4COOH$; m.w. 286.09; pa. yel. nee leaf.; i.w., s.al.

o-azoxybenzoic acid (o, o'-azoxybenzoic acid; azoxybenzene-2, dicarboxylic acid). $C_6H_4CO(NON)C_6H_4COOH$; m.w. 286.09; yel. tricl. leaf. f.al.; i.w.; s.al.

p-azoxybenzoic acid (p, p'-azoxybenzoic acid). $C_6H_4COOH(NC_6H_4COOH$; m.w. 286.09; yel. am i.w.; i.al.

o, o'-, m, m'-, or p, p'-azoxydibenz acid. See o-, m-, or p-azoxybenz acid.

1, 1'-azoxydinaphthalene. See 1, azoxynaphthalene.

1, 1'-azoxynaphthalene (1, 1'-azodinaphthalene; α, α'-azoxynaphthalene). $C_{10}H_7(NON)C_{10}H_7$; m 298.13; yel.-red rhomb. f.al.; m.p. i.w.; s.al.

2, 2'-azoxynaphthalene (β, β'-azonaphthalene). $C_{10}H_7(NON)C_{10}$ m.w. 298.13; yel. rhomb. need. f. m.p. 167-8; i.w.; s.al.

azure blue. See smalt.

azurite (blue malachite; chessylite). mineral; $2CuCO_3 \cdot Cu(OH)_2$; monoc bl.; sp.gr. 3.77-3.83; hardness 3.5-4

azurmalachite. A natural mixture of t blue and green copper carbonat

azymous. Without fermenting agent unleavened.

B

oli. (bacterium coli; escherichia coli).
acteria whose presence in water is sed as an indication of pollution by ecal matter.
number. Measure of butyric acid precipitated from butter fat.
tage resin. Thermosetting resins eacted to a stage where it softens when heated and swells in contact with liquids but does not entirely use or dissolve; preferred stage for esin in molding compositions.
bassu oil. See oil, Babassu.
bbitt metal. An anti-friction bearing alloy of the following approximate composition: tin 90, antimony 7, copper 3.
bcock test. Method for determining percentage of fat in milk by a centrifugal process.
binet absorption rule. Positive, uniaxial crystals have greater absorption for the extraordinary component, negative crystals for the ordinary component, of the light doubly refracted by them.
binet principle. Identical diffraction patterns of a substance are produced by two diffraction screens one of which is the exact negative of the other.
bo's law. The lowering of the vapor pressure is proportional to the mole fraction of non-volatile solute in a solution.
bulum oil. See oil, neats foot.
cillicide. An agent which destroys bacilli.
cilliform. Having the shape of a bacillus; bacillus-like.
cillus. A genus of schizomycetes; a rod-shaped, unicellular microorganism.
Back-Goudsmit effect. Effect of a weak magnetic field on spectral lines of an element having a nuclear magnetic moment.
back filling. Process of applying starch with or without other filling or weighting materials to the back of a cloth.
Backdura. A synthetic tar-acid resin.
bacteria. One-celled microscopic fungus parasitic plants; usually one of three forms: spheres, rods, or spirals.
bactericide. A substance used to kill bacteria.
bacterin. Bacterial vaccine; altered or killed culture of disease germs.
bacteriolysin. Agent which destroys bacteria in the blood.
bacteriophage. Organisms which attack bacteria; found in intestinal tracts of animals.
bacteriostatic. Antiseptic.
bacterium coli. See b. coli.
bacteroid. Involution form of bacteria in process of growth.
baddeleyite. A mineral; ZrO_2; monocl., col.-yel., br., blk.; sp.gr. 5.50-6.03; hardness 6.5.
Baeyer's acid. See croceic acid.
bagasse. The residue left after the juice has been expressed from sugar cane.
Baily furnace. Electric resistance furnace having coke granules between carbon electrodes.
Bakelaque. Synthetic oil soluble tar-acid resin.
Bakelit. Synthetic tar-acid resin.
Bakelit A. Synthetic tar-acid resin.
Bakelit C. Synthetic tar-acid resin.
Bakelite. A plastic produced by polymerization under heat and pressure of phenol with formaldehyde. Produced in transparent, translucent, colored and colorless forms, it can be modified by use of fillers, is thermosetting and infusible, burns slowly, and can be incorporated in varnishes and lacquers.
baking soda. See sodium carbonate, acid.
balance. Instrument used to determine weights.
balance, accelerating. Balance designed to operate in unstable equilibrium.
balance, torsion. Scale having equal arms and using horizontal steel bands instead of pivots and bearings.
balance, Westphal. See Westphal balance.
balanced equilibrium. System in which total of all energy produced and absorbed equals zero.
balancing, detailed. See microscopic reversibility, principle of.
balata. Coagulated latex of the juice of a South American tree, used as a substitute for gutta percha, which it resembles.
ball clay. See fat clay.
ball mill. Rotating cylindrical mill using porcelain or steel balls for grinding pigments, enamels, etc.
Balmer series. Series of hydrogen spectral lines of frequencies which progress in proportion to the sequence of certain numbers.
balsam. Exudation of plants which consists chiefly of resin, gum, volatile oil, and certain aromatic acids (benzoic or cinnamic acids) or mixtures of these products.
balsam, black. See Peru balsam.
balsam, Canada. Yel. liq. derived from Abies balsamica; sp.gr. 0.983-0.997; used in mfr. of lacquers, adhesives for lenses, instruments and in medicine.
balsam, Copaiba. See Copaiba balsam.
balsam gurjun (wood oil). An oleo resin; clear liq.; sp.gr. 0.955-0.965; s.al.; used in mfr. of lacquers and varnishes, in medicine.
balsam, Indian. See Peru balsam.
balsam, Peru. See Peru balsam.
banded spectrum. See spectrum, banded.
baphiin. $C_{12}H_{10}O_4$ or $C_{24}H_{20}O_8$; m.w. 218.08 or 436.16; leaf.; i.w.; s.al.
baptitoxine. See cytisine.
bar (bary). International unit of pressure equal to 14.504 lb./sq. in. Atmospheric pressure equal to 29.53 in. of mercury.
bar, milli-. A unit of pressure; $^1/_{1000}$th of a bar.
barberry bark. Bark of the Berberis vulgaria of Europe and North America; used in mfr. of dye extracts, berberine; as a preserve; for production of gloss and lustre on leathers; in medicine.
barbital (5, 5-diethylbarbituric acid; veronal; barbitone; malourea). $NHCONHCOC(C_2H_5)_2CO$; m.w. 184.11; wh. cr. powd.; m.p. 191; s.w.; s.al.
barbitone. See barbital.
barbituric acid (malonylurea; pyrimidinetrione). $NHCONHCOCH_2CO$; m.w. 128.05; wh. rhomb. pr.; m.p. 245; s.w.; s.al.
barbituric acid, 5-amino-. See uramil.
barbituric acid, 5, 5-diallyl- (dial). $NHCONHCOC(C_3H_5)_2CO$; m.w. 208.11; col. sc.; m.p. 170; s.w.; s.al.
barbituric acid, 5, 5-diethyl-. See barbital.
barbituric acid, 5, 5-dipropyl- (proponal; propytal). $NHCONHCOC(C_3H_7)_2CO$; m.w. 212.14; col. cr.; m.p. 145; s.w.; s.al.
barbituric acid, 5-ethyl-5-isoamyl- (amytal). $NHCONHCOC(C_2H_5)(C_5H_{11})CO$; m.w. 226.16; col.; m.p. 135; s.w.; s.al.
barbituric acid, 5-ethyl-5-α-methylbutyl-. $NHCONHCOC(C_2H_5)(C_5H_{11})CO$; m.w. 226.16; col.; m.p. 128.5-130; s.w.; s.al.
barbituric acid, 5-ethyl-5-phenyl-. See phenobarbitol.
barbituric acid, 5-(2-fural)-2-thio- (furfuralmalonyl thiourea). $C_4H_3OCH{:}CCONHCSNHCO$; m.w. 222.12; yel. flocks; i.w.
barbituric acid, 5-hydroxy-. See dialuric acid.
barbituric acid, 5-isonitroso-. See violuric acid.
bardol. Viscous liquid coal tar hydrocarbon; rubber softener.
baricentric. See centrobaric.
barite (barytes). A mineral; $BaSO_4$; rhomb., col., wh., yel., bl., br. or red; sp.gr. 4.3-4.6; hardness 2.5-3.5.
barite, nitro-. See barium nitrate.
barium. Ba; m.w. 137.36; s.g. 3.5 [20]; m.p. 850; b.p. 1140; s.al.; a metallic element of the alkaline earth group, resembling calcium chemically; silvery white and soft, like lead; found only in combination, chiefly as the sulfate and carbonate. The nitrate and chlorate are used in pyrotechny for green colors, the sulfate in paint manufacture.
barium acetate. $Ba(C_2H_3O_2)_2 \cdot H_2O$; m.w. 273.42; tricl. col.; s.g. 2.19, anh. 2.47; s.w.; s.al.
barium arsenate. $Ba_3(AsO_4)_2$; m.w. 689.94; blk.
barium arsenate, acid. $BaHAsO_4 \cdot H_2O$; m.w. 295.31; rhomb. or monocl. col.; s.g. 3.93 [15]; m.p. $-H_2O$, 150; s.w.
barium benzoate. $Ba(C_7H_5O_2)_2 \cdot 2H_2O$; m.w. 415.47; col. nacreous leaf; s.w.; s.al.
barium boride. BaB_6; m.w. 202.28; cub. blk.; s.g. 4.36 [15]; i.w.
barium bromate. $Ba(BrO_3)_2 \cdot H_2O$; m.w. 411.21; monocl. col.; s.g. 3.99 [16]; i.al.
barium bromide. $BaBr_2$; m.w. 297.19; s.g. 4.781 [24]; m.p. 847; s.w.
barium bromide (hydrated). $BaBr_2 \cdot 2H_2O$; m.w. 333.22; monocl. col.; s.g. 358 [24]; m.p. $-H_2O$ 75; b.p. $-2H_2O$ 120; s.w.; s.al.
barium butyrate. $Ba(C_4H_7O_2)_2 \cdot 2H_2O$; m.w. 347.50; s.w.
barium carbide. BaC_2; m.w. 161.36; tetr. gray; s.g. 3.75.
barium carbonate (witherite). $BaCO_3$; m.w. 197.36; rhomb. wh.; s.g. 4.43; i.al.
barium carbonate (α). $BaCO_3$; m.w. 197.36; hex. wh.; s.g. 4.43; i.al.
barium carbonate (β). $BaCO_3$; m.w. 197.36; white.; m.p. 1740 [90atm.]; i.al.
barium chlorate. $Ba(ClO_3)_2 \cdot H_2O$; m.w. 322.29; monocl. col.; s.g. 3.18; m.p. anh. 414; b.p. $-H_2O$, 120; s.w.; s.al.
barium chlorate, per-. $Ba(ClO_4)_2$; m.w. 336.27; hex. col.; s.g. (3[illegible] 2.74; m.p. 505; s.w.; s.al.
barium chloride. $BaCl_2$; m.w. 208.27; monocl. col.; s.g. 3.856 [24]; b.p. 1560; s.w.; i.al.
barium chloride. $BaCl_2$; m.w. 208.27; cubic col.; m.p. 962; b.p. 1560.
barium chloride (hydrated). $BaCl_2 \cdot 2H_2O$; m.w. 244.31; rhomb. col.; s.g. 3.097 [24]; m.p. $-2H_2O$ 113; s.w.; i.al.
barium chloroplatinate. $BaPtCl_6 \cdot 6H_2O$; m.w. 653.43; rhomb. or.-yel.; s.g. 2.868; m.p. $-5H_2O$, 70; s.w.
barium chloroplatinite. $BaPtCl_4 \cdot 3H_2O$; m.w. 528.46; s.g. 2.868; s.w.; s.al.
barium chromate. $BaCrO_4$; m.w. 253.37; rhomb. yel.; s.g. 4.498 [15].
barium chromate, di-. $BaCr_2O_7$; m.w. 353.38; monocl. red; s.w.
barium chromate, di- (hydrated). $BaCr_2O_7 \cdot 2H_2O$; m.w. 389.41; br. red.-yel. need.
barium citrate. $Ba_3(C_6H_5O_7)_2 \cdot 7H_2O$; m.w. 916.27; wh. powd.; s.w.; s.al.
barium cyanide. $Ba(CN)_2$; m.w. 189.38; wh. cr. powd.; s.w.; s.al.
barium dithionate. $BaS_2O_6 \cdot 2H_2O$; m.w. 333.51; rhomb. or monocl. col.; s.g. 4.536 [13.5]; s.w.; s.al.
barium ethyl sulfate. $Ba(C_2H_5SO_4)_2 \cdot 2H_2O$; m.w. 423.59; wh. lust. leaf; s.w.; s.al.
barium ferrocyanide. $Ba_2Fe(CN)_6 \cdot 6H_2O$; m.w. 594.70; monocl. yel.
barium fluobromide. $BaBr_2 \cdot BaF_2$; m.w. 472.55; pl.; s.g. 4.96 [18]; i.al.
barium fluochloride. $BaCl_2 \cdot BaF_2$; m.w. 383.63; tetr.; s.g. 4.51 [15]; i.al.
barium fluoiodide. $BaI_2 \cdot BaF_2$; m.w. 566.56; plates; s.g. 5.21 [18]; i.al.
barium fluoride. BaF_2; m.w. 175.36; cub. col.; s.g. 4.83; m.p. 1280; b.p. 2137; s.w.
barium fluosilicate. $BaSiF_6$; m.w. 279.42; rhomb. need.; s.g. 4.29 [21]; i.al.
barium formate. $Ba(CHO_2)_2$; m.w. 227.38; rhomb. col.; s.g. 3.21; s.w.; i.al.
barium hydrate. See barium hydroxide.
barium hydride. BaH_2; m.w. 139.38; gray cryst.; s.g. 4.21 [0]; b.p. 1400.
barium hydrosulfide. $Ba(SH)_2 \cdot 4H_2O$; m.w. 275.56; rhomb. yel.; s.w.; i.al.
barium hydroxide. $Ba(OH)_2 \cdot 8H_2O$; m.w. 315.50; monocl. col.; s.g. 2.18 [18], anh. 4.50; m.p. 78, $-8H_2O$ 780; b.p. 103; s.w.; s.al.
barium iodate. $Ba(IO_3)_2$; m.w. 487.20; monocl.; s.g. 4.998.
barium iodate (hydrated). $Ba(IO_3)_2 \cdot H_2O$; m.w. 505.22; monocl. col.; s.g. 5.23; m.p. $-H_2O$ 130; s.w.; i.al.
barium iodide. $BaI_2 \cdot 2H_2O$; m.w. 427.23; rhomb. col.; deliq.; s.g. 5.15, anh. 4.917; b.p. $-2H_2O$ 539; s.w.
barium malate. $BaC_4H_4O_5$; m.w. 269.39; s.w.
barium malonate. $BaC_3H_2O_4 \cdot H_2O$; m.w. 257.39; s.w.
barium manganate. $BaMnO_4$; m.w. 256.29; hex. gray-grn.; s.g. 4.85; s.w.
barium mangate, per-. $Ba(MnO_4)_2$; m.w. 375.22; br.-vlt. cr.; s.w.
barium methyl sulfate. $Ba(CH_3SO_4)_2 \cdot$-

$2H_2O$; m.w. 395.56; col. effl. cr.; s.w.; s.al.

barium molybdate. $BaMoO_4$; m.w. 297.36; wh. powd.

barium nitrate (nitrobarite). $Ba(NO_3)_2$; m.w. 261.38; cub. col.; s.g. 3.24^{22}; m.p. 592; s.w.; i.al.

barium, nitride hexa-. $BaN_6 \cdot H_2O$; m.w. 239.42; cryst.; s.w.; s.al.

barium nitrite. $Ba(NO_2)_2 \cdot H_2O$; m.w. 247.39; hex. col.-yelsh.; s.g. 3.173^{20}; s.w.

barium oxalate. BaC_2O_4; m.w. 225.36 s.g. 2.658; s.w.; i.al.

barium oxide. BaO; m.w. 153.36; cub. or hex. col., wh.-yelsh. powd.; s.g. 5.72, hex. 5.32; m.p. 1923; b.p. *ca.* 2000; s.w.; s.al.

barium oxide, di-. See barium oxide, per-.

barium oxide, per-. BaO_2; m.w. 169.36; wh.-gray powd.; s.g. 4.96; m.p. 450; b.p. (O lost) 800; s.w.

barium oxide, per-, (hydrated). $BaO_2 \cdot 8H_2O$; m.w. 313.48; hex. col.; m.p. $-8H_2O$, 100; i.al.

barium, phosphate, hypo-. $BaPO_3$; m.w. 216.38; need.; s.w.; s.al.

barium phosphate, ortho-, di-. $BaHPO_4$; m.w. 233.39; rhomb. wh.; s.g. 4.165^{15}.

barium phosphate, ortho-, mono-. $BaH_4(PO_4)_2$; m.w. 331.43; tricl.; s.g. 2.94.

barium phosphate, ortho-, tri-. $Ba_3(PO_4)_2$; m.w. 602.12; cub. wh.; s.g. 4.1^{16}; i.w.

barium phosphate, pyro-. $Ba_2P_2O_7$; m.w. 448.76; rhomb. wh.; s.g. 3.9^{20}; s.w.

barium phosphite, hypo-. $Ba(H_2PO_2)_2 \cdot H_2O$; m.w. 285.45; monocl. wh.; s.g. 2.90; s.w.; i.al.

barium platinocyanide. $BaPt(CN)_4 \cdot 4H_2O$; m.w. 508.68; (a) monocl. yel. (b) rhomb. grn.; s.g. (a) 2.076, (b) 2.085; m.p. $-2H_2O$ 100; s.w.; i.al.

barium propionate. $Ba(C_2H_5CO_2)_2 \cdot H_2O$; m.w. 301.45; rhomb.; s.w.

barium salicylate. $Ba(C_6H_4OHCOO)_2 \cdot H_2O$; m.w. 429.45; wh. need.; s.w.

barium selenate. $BaSeO_4$; m.w. 280.56; s.g. 475.

barium silicate. $BaSiO_3$; m.w. 213.42; rhomb. col.; s.g. 4.399; m.p. 1604; s.w.

barium silicate (hydrated). $BaSiO_3 \cdot 6H_2O$; m.w. 321.51; rhomb.; s.g. 2.59.

barium stearate. $BaC_{17}H_{31}O_2$; m.w. 408.63; wh. cryst.; i.al.; used for waterproofing purposes.

barium succinate. $BaC_4H_4O_4$; m.w. 253.39; s.w.; s.al.

barium sulfate (barite). $BaSO_4$; m.w. 233.42; rhomb. wh. (monocl.); s.g. 4.50^{15}; m.p. 1580.

barium sulfate, per-. $BaS_2O_8 \cdot 4H_2O$; m.w. 401.54; monocl. wh.; s.w.; s.al.

barium sulfide. See barium sulfide, mono-.

barium sulfide, mono-. BaS; m.w. 169.42; cub. col.; s.g. 4.25^{15}; i.al.

barium sulfide, tetra-. $BaS_4 \cdot 2H_2O$; m.w. 301.63; rhomb.; s.g. 2.988; s.w.; i.al.

barium sulfide, tri-. BaS_3; m.w. 233.54; yel.-grn.; s.w.

barium sulfite. $BaSO_3$; m.w. 217.42; cub. col.

barium sulfocyanide. See barium thiocyanate.

barium tartrate. $BaC_4H_4O_6 \cdot H_2O$; m.w. 303.41; s.g. $2.980^{20.5}$; s.w.; s.al.

barium thiocyanate. $Ba(CNS)_2 \cdot 2H_2O$; m.w. 289.53; need.; s.w.; s.al.

barium thiosulfate. BaS_2O_3; m.w. 249.48; rhomb. wh.

barium thiosulfate (hydrated). $BaS_2O_3 \cdot H_2O$; m.w. 267.50; wh. cr. powd.; s.g. 3.5; s.w.

barium tungstate. $BaWO_4$; m.w. 385.36; tetr. col.; s.g. 5.64; s.w.

barium tungstate, meta-. $BaW_4O_{13} \cdot 9H_2O$; m.w. 1243.50; rhomb.; s.g. 4.30; s.w.

Barkhausen effect. Discontinuous variation of induction in ferromagnetic substances in a field of gradually increasing strength.

Barkite. Methyl or dimethyl cyclohexanol oxalate.

barkometer. Density scale used for tanning extracts. Consists of first digits to right of decimal point of the specific gravity value.

barm. The yeasty top formed on fermenting beer, used as a leaven for bread.

Barnett effect. Magnetization of a body due to its rotation.

barograph. Automatic recording barometer.

barometer. Instrument for measuring atmospheric pressure.

baroscope. Instrument that shows changes in atmospheric pressure.

barostat. Device for regulation or maintenance of pressure at a constant value, analogous to the thermostat.

barre (barry). Having bars or streaks in direction of filling yarns in a fabric.

barrier substance. Material for protection of skin when exposed to irritants.

barry. See barre.

Bartell cell. A displacement cell for determining adhesion tension between liquids and solids.

barye. See bar.

barysilite. A mineral; $Pb_8Si_8O_{27}$; trig., wh.; sp.gr. 6.53-6.707; hardness 3.

barytes. See barite and barium sulfate.

basal plane. Crystal plane parallel to the principal plane of symmetry.

basalt. A rock containing augite, $CaMg(SiO_3)_2$.

basanite. See Lydian stone.

base. A substance which neutralizes acids producing only a salt and water; a substance which will combine with hydrogen ions; a proton-acceptor; in water solution, a base has a bitter taste, soapy feeling, neutralizes acids, and turns litmus blue. The most general modern definition is that it is an ionic compound which yields the same anion as the solvent but a different cation.

base exchange. See cation exchange.

base, weak. A base which ionises slightly in dilute aqueous solution yielding relatively few hydroxyl ions, generally a covalent compound.

basic color. Basic dye, containing amino groups, which are fixed on cotton goods with acidic mordants.

basic dye. Dyes which color silk and wool directly in slightly alkaline bath, e.g. rhodamines.

basic oxide. A metallic oxide which reacts with water to form a base, e.g. CaO; metallic oxides.

basic process. Procedure of refining metals in a furnace or converter lined with a basic material such as dolomite.

basic salt. See salt, basic.

basicity. Alkalinity, ability to neutralize or accept protons from acids. Ratio of amount of metallic or basic oxides in a silicate slag to the amount of silica.

basicity of acids. The number of hydrogen ions that can be formed from one molecule of the acid, e.g. HCl is monobasic, H_2SO_4 dibasic and H_3PO_4 tribasic.

basidiomycetes. Class of fungi including grain smuts, rusts and toadstools.

basil. Undyed and unfinished tanned sheepskin or lambskin.

basil oil. See oil, basil.

Basilite. A mixture of sodium fluoride and dinitrophenol-aniline, a wood preservative.

bassora gum. See gum, bassora.

bassorin (tragacanthin). $C_{16}H_{10}O_5$(?); m.w. 282.08; amor.; s.w.; i.al.; a mucilage.

bast. Fiber from inner bark of trees.

bast fibers. Fibers found in inner bark of various plants, e.g. flax.

bastose. The cellulose of jute.

basylous. Referring to a group which tends inductively to lower the acidity of the molecule of which it forms a part, e.g. $-COO^-$.

batavia damar gum. See gum, batavia damar.

batch. A portion of weighed or measured ingredients for producing a commercial product by means of physical or chemical action.

bathotonic. Tendency to lower surface tension of water.

bating (puering). Bacterial process that frees skins from lime and alkaline sulfides, makes them soft and clean and prepares them for pickling and tanning.

battery, A. Battery for supplying current to filaments in radios.

battery acid. Sulfuric acid of strengths suitable for use in storage batteries.

battery, B. Battery of low amperage and high voltage used in radio.

battery, C. Battery used in radio work to prevent distortion and rapid depletion of B battery.

batu gum. See gum, batu.

Baudouin test. Color reaction used to detect sesame oil, effected by addition of cane sugar and hydrochloric acid to a fat.

Baume (Bé). A specific gravity unit.

bauxite (beauxite). A mineral; $Al_2O_3 \cdot 2H_2O$; amor., wh., br., yel. or redsh.; sp.gr. 2.55; hardness 1-3; most important source of aluminum.

bay oil. See oil, laurel.

bay rum. A mixture obtained by distilling bay leaves and rum.

bayberry wax. See wax, bayberry.

Beacon red. Fine particle size red pigment lake having an aluminum hydrate base.

beaker. A thin, heat-resistant glass container, an open cylinder in shape, used to hold and heat liquids.

beam, molecular. See molecular ray.

bean oil. See oil, soybean.

bear berry. See uva ursi.

bearing alloy, white metal. Alloy in which tin, lead and cadmium are the predominating elements.

beat. Maximum or minimum of intensity caused by interference of two wave series of slightly different frequencies. The number of beats per second is equal to the difference in frequency of the two tones.

beater. Machine, used in paper manufacture, for reducing size of pieces of pulp.

Beaumé. See Baumé.

beauxite. See bauxite.

bebeerine. $C_{18}H_{21}NO_3$; m.w. 299.17; mixture(?), pr. f.me. al.; m.p. 214; s.w.; s.al.

bebeerine, hydrochloride. $C_{18}H_{19}NO_3 \cdot HCl$; m.w. 333.62; hyg. need. or sc.; m.p. 259-60; s.w.; s.al.

beccarite. A mineral; $ZrO_2 \cdot SiO_2$; sp.gr. 6.54-6.74.

Beck's hydrometer. Hydrometer with scale where 0° corresponds to sp.gr. 1.000 and 30° to sp.gr. 0.850; equal divisions on the scale are continued as far as required in both directions.

Beckacite. A synthetic tar-acid or alkyd resin.

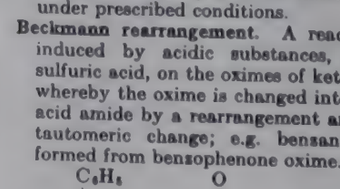
Beckamine. Synthetic urea resin.

Beckasol. Synthetic tar-acid resin.

Becke line. In microscopy, a thin band of light outlining an object bounded by nearly vertical surfaces, when a narrow illuminating cone and an objective of low aperture are used.

Becker value. Percentage reflection of fiber samples prepared and measured under prescribed conditions.

Beckmann rearrangement. A reaction induced by acidic substances, e.g. sulfuric acid, on the oximes of ketones whereby the oxime is changed into an acid amide by a rearrangement and a tautomeric change; e.g. benzanilide formed from benzophenone oxime.



Beckol. Synthetic alkyd resin.

Beckophen. Heat hardening ph molding plastic.

Beckopol. Synthetic phenolated resin used in varnish.

Beckosol. Pure or modified alkyd or solution thereof used in paints

Becksol. Alkyd or modified alkyd

Beckton white. See lithopone.

Becquerel effect. Production of e.m.f. when two identical electr immersed in an electrolyte ar luminated unequally.

Becquerel membrane. Semiperme membrane produced by a chem precipitation.

Becquerel rays. Rays emitted by r active materials such as radium.

beef stearin. Residue obtained cold pressing of beef fat to ob oleo oil.

Beer's law. The degree of absorp of light depends on the thickne the layer traversed and on the mo ular concentration of colored stance in that layer.

beeswax. See wax, bees.

beet sugar. Sugar obtained from be $C_{12}H_{22}O_{11}$.

Beetle. A urea-formaldehyde, ther plastic resin, translucent and opaq and in colors. Resistant to alcoh esters, hydrocarbons and oils.

behenic acid (docosanoic acid; n-docos acid). $CH_3(CH_2)_{20}COOH$; m.w. 34 34; col. need.; m.p. 80.7; b.p. 30 s.w.; s.al.

behenic acid, ethyl ester. $C_{12}H$ $COOC_2H_5$; m.w. 368.37; need. f. m.p. 54-4.5; b.p. 230-1 ^{15}; i.w.; s.al.

behenic acid, methyl ester. $C_{21}H$ $COOCH_3$; m.w. 354.36; cr.; m 54-4.5; b.p. 224-5 ^{15}; i.w.; s.al.

behenolic acid (13-docosynoic aci $CH_3(CH_2)_7C:C(CH_2)_{11}COOH$; m. 336.31; col. need. f.al.; m.p. 57 i.w.; s.al.

bel. Interval on a logarithmic sca expressing relationship between t quantities of power; unit of differen in sound sensation degrees.

Belfils bridge. Resonance bridge determining harmonic purity of electric wave train.

bell crank. Lever or crank with t arms at right angles.

bell metal. An alloy consisting copper 78, tin 22; sp.gr. 8.7.

bell jar. A glass jar of bell shape us for enclosing instruments such microscopes, covering vessels, and f other purposes.

belladonine. $C_{17}H_{21}NO_3$; m.w. 271.1 amor. resin; s.w.; s.al.

belladonna (deadly nightshade). herbaceous perennial with a flesh creeping root containing the acti ingredient hyoscyamine; used in me cine for local relief and sposmod asthma.

Bemberg yarn. The trade name f a cuprammonium silk.

Ben Day process. Photoengravi process in which designs are tra ferred from gelatin films to met plates and then etched.

bending moment (flexural momen The torque at any point effective bending an elastic rod.

Benedick's effect. The opposite of t Thompson effect (q.v.), namely, th in a homogeneous conductor a diff ence in potential between two poin will produce a difference of temper ture between those points.

Bengal fire. A mixture of realgar, pota sium nitrate, and sulfur used pyrotechnics.

benguela, gum. See gum benguela.

beni oil. See oil, sesame.

benitoite. A mineral containing th acid titanosilicate of bariu $BaTi(SiO_3)_3$, and forming beautif sapphire-blue, transparent hexagon crystals suitable for cutting as gems sp.gr. 3.64-3.65; hardness 6.0-6.5.

Bensapol. A combination of sulfonate oils and a solvent, used as a wettin

nt and detergent in the textile ustry.

nite. A colloidal clay having a at affinity for water, used in tery clays and as a filler for soap paper.

conine (benzoylaconine; napeline; aconitine). $C_{32}H_{43}NO_{10}$; m.w. .34; amor.; m.p. 130.

lazine. See benzaldehyde, azine.

l bromide (α, α-dibromotoluene; zylidene bromide). $C_6H_5CHBr_2$; w. 249.88; fum. oily liq.; b.p. 140 ^{20}; .; s.al.

ldehyde (benzenecarbonal). C_6H_5-IO; m.w. 106.05; col. liq.; m.p. 26; b.p. 179.5; s.w.; s.al.

ldehyde green. See malachite een.

aldehyde, 4-acetoxy-3-methoxy-. e vanillin, acetate.

aldehyde, m-amino-. $NH_2C_6H_4$-HO; m.w. 121.06; in solution only.

aldehyde, o-amino-. See anthranaldehyde.

aldehyde, p-amino-. $NH_2C_6H_4$-HO; m.w. 121.06; pl. or leaf. f.w.; p. 71; s.w.; s.al.

aldehyde, azine (benzalazine; benzylideneazine; dibenzalhydrazine). $C_6H_5CH:NN:CHC_6H_5$; m.w. 208.11; g. yel. lust. pr.; m.p. 93; i.w.; s.al.

aldehyde, m-chloro- (3-chlorobenzenecarbonal). ClC_6H_4CHO; m.w. 40.50; liq. or pr.; m.p. 17-8; b.p. 13-4; s.w.; s.al.

aldehyde, o-chloro- (2-chlorobenzenecarbonal). ClC_6H_4CHO; m.w. 40.50; liq.; m.p. 11; b.p. 208 ^{740}; s.w.; al.

aldehyde, p-chloro- (4-chlorobenzenecarbonal). ClC_6H_4CHO; m.w. 40.50; leaf.; m.p. 47.5; b.p. 214; s.w.; al.

aldehyde, cyanohydrin. See mandelnitrile.

aldehyde, diacetyl-. See benzal iacetate.

aldehyde, 2, 4-dihydroxy-. See β-esorcylaldehyde.

aldehyde, 3, 4-dihydroxy-. See rotocatechualdehyde.

aldehyde, 2, 4-dimethoxy- (2, 4-imethoxy benzenecarbonal; β-resoreyl ldehyde dimethyl ether). $(CH_3O)_2$-C_6H_3CHO; m.w. 166.08; need. f.dil.al.; n.p. 69-70; b.p. 165 ^{18}; i.w.; s.al.

aldehyde, 3, 4-dimethoxy-. See eratraldehyde.

aldehyde, p-dimethylamino- (4-dimethylamino benzene carbonal). $(CH_3)_2NC_6H_4CHO$; m.w. 149.09; leaf. .w.; m.p. 74; b.p. 176-7 ^{17}; s.w.; s.al.

aldehyde, 2, 4-dinitro- (2, 4-dinitro benzenecarbonal). $(NO_2)_2C_6H_3$-CHO; m.w. 196.05; pa. yel. cr. f.al.; n.p. 72; b.p. 190-210 $^{10-20}$; s.w.; s.al.

aldehyde, 2, 6-dinitro- (2, 6-dinitro benzenecarbonal). $(NO_2)_2C_6H_3$-CHO; m.w. 196.05; leaf. f. dil. ac. a.; n.p. 123; s.w.; s.al.

aldehyde, 4-ethoxy-3-methoxy- (vanillin ethyl ether; protocatechualdehyde 4-ethyl 3-methyl ether). C_2H_5-$O(CH_3O)C_6H_3CHO$; m.w. 180.09; monocl. pr.; m.p. 64-5; s.w.; s.al.

aldehyde, hydrazone (benzalhydrazine; benzylidene hydrazine). C_6H_5-$CH:NNH_2$; m.w. 120.08; col. leaf. or liq.; m.p. 16; b.p. 140 ^{14}; s.al.

aldehyde, m-hydroxy-. HOC_6H_4-CHO; m.w. 122.05; col. need. f.w.; m.p. 106; b.p. 240; s.w.; s.al.

aldehyde, o-hydroxy-. See salicylaldehyde.

aldehyde, p-hydroxy-. HOC_6H_4-CHO; m.w. 122.05; col. need. f.w.; m.p. 116; s.w.; s.al.

aldehyde, 4-hydroxy-3-methoxy-. See vanillin.

aldehyde, p-isopropyl-. See cumaldehyde.

aldehyde, o-methoxy-. (salicylaldehyde methyl ether; o-anisaldehyde). $CH_3OC_6H_4CHO$; m.w. 136.06; pr.; m.p. 35; b.p. 243; i.w.; s.al.

benzaldehyde, p-methoxy-. See anisaldehyde.

benzaldehyde, methyl-. See tolualdehyde.

benzaldehyde, 3, 4-methylenedioxy-. See piperonal.

benzaldehyde, m-nitro-. $NO_2C_6H_4CHO$; m.w. 151.05; lt. yel. need. f.w.; m.p. 58; b.p. 164 ^{22}; s.w.; s.al.

benzaldehyde, o-nitro-. $NO_2C_6H_4CHO$; m.w. 151.05; yel. need. f.w.; m.p. α 40, β 37.9; b.p. 156 ^{15}; s.w.; s.al.

benzaldehyde, p-nitro-. $NO_2C_6H_4CHO$; m.w. 151.05; col. pr. f.w.; m.p. 106.5; s.w.; s.al.

benzaldehyde, α-, trans, or anti-oxime (trans benzaldoxime). $C_6H_5CH:NOH$; m.w. 121.06; col. leaf.; m.p. 35; b.p. 200; s.w.; s.al.

benzaldehyde, β-, cis-, or syn-oxime (cis-benzaldoxime). $C_6H_5CH:NOH$; m.w. 121.06; col. rhomb. tab. or need.; m.p. 130; s.w.; s.al.

benzaldehyde, phenylhydrazone (benzalphenylhydrazine; benzylidene phenylhydrazine). $C_6H_5CH:NNH$-C_6H_5; m.w. 196.11; col.-pink monocl. pr.; m.p. 156; s.al.

o-benzaldehyde sulfonic acid. See benzinesulfonic acid, o-formyl-.

benzaldehyde, 2, 4, 6-trinitro-. $(NO_2)_3$-C_6H_2CHO; m.w. 241.05; pl. f. bz.; m.p. 119; i.w.; s.al.

benzaldehyde, trithio-. See s-trithiane, triphenyl-.

benzal diacetate (benzylidene diacetate; diacetylbenzaldehyde; α, α-diacetoxytoluene). $C_6H_5CH(OOCCH_3)_2$; m.w. 208.09; m.p. 44-6; b.p. 220; s.al.

benzaldoxime. See benzaldehyde, oxime.

benzaldoxime carboxylic anhydride. See 2, 3, 1-benzoxaz-1-one.

benzal hydrazine. See benzaldehyde, hydrazone.

benzalimine, N-ethyl-. See ethylamine, N-benzal-.

benzalphenyl hydrazine. See benzaldehyde, phenylhydrazone.

benzamarone- (1, 2, 3, 4, 5-pentaphenyl-1, 5-pentanedione [one form]; α, α'-benzalbisdesoxy benzoin). C_6H_5-$CH[CH(C_6H_5)COC_6H_5]_2$; m.w. 480.22; col. cr.; m.p. 217-8; s.w.; s.al.

benzamide (benzenecarbonamide; benzoic amide). $C_6H_5CONH_2$; m.w. 121.06; col. monocl.; m.p. 130; b.p. 290; s.w.; s.al.

benzamide, m-amino-. $NH_2C_6H_4$-$CONH_2$; m.w. 136.08; yel. need. $(+1H_2O)$ f.w.; m.p. 113-4 anh., $+H_2O$ 79; s.w.; s.al.

benzamide, o-amino-. $NH_2C_6H_4$-$CONH_2$; m.w. 136.08; leaf. f. chl.; m.p. 109-11.5; s.w.; s.al.

benzamide, p-amino-. $NH_2C_6H_4$-$CONH_2$; m.w. 136.08; yel. cr.; m.p. 183 (anh.); s.w.; s.al.

benzamide, m-chloro- (3-chlorobenzenecarbonamide). $ClC_6H_4CONH_2$; m.w. 155.51; need.; m.p. 134.5; s.w.; s.al.

benzamide, o-chloro- (2-chlorobenzenecarbonamide). $ClC_6H_4CONH_2$; m.w. 155.51; lng. rhomb. need. f.w.; m.p. 142; s.w.; s.al.

benzamide, p-chloro- (4-chlorobenzenecarbonamide). $ClC_6H_4CONH_2$; m.w. 155.51; need. f.et.; m.p. 170; s.w.; s.al.

benzamide, m-hydroxy-. HOC_6H_4-$CONH_2$; m.w. 137.06; col. leaf. f.w.; m.p. 170.5; s.w.; s.al.

benzamide, o-hydroxy-. See salicylamide.

benzamide, p-hydroxy-. HOC_6H_4-$CONH_2$; m.w. 137.06; need. f.w.; m.p. 162, anh.; b.p. $-H_2O$, 100; s.w.; s.al.

benzamide, o-, m- or p-methyl-. See toluamide.

benzamide, m-nitro-. $NO_2C_6H_4CONH_2$; m.w. 166.06; yel. monocl. need. f.w.; m.p. 142.7; b.p. 315; s.w.; s.al.

benzamide, o-nitro-. $NO_2C_6H_4CONH_2$; m.w. 166.06; need. f.dil.al.; m.p. 176.6; b.p. 317; s.w.; s.al.

benzamide, p-nitro-. $NO_2C_6H_4CONH_2$; m.w. 166.06; need. f.w.; m.p. 201.4; s.w.; s.al.

benzamide, oxime (benzamidoxime; benzenylaminoxide). $C_6H_5C(:NOH)$-NH_2; m.w. 136.08; monocl. pr. f.w.; m.p. 79-80; s.w.; s.al.

benzamide, N-phenyl-. See benzanilide.

benzamidine (benzenecarbonamidine; benzenylamidine). $C_6H_5C(:NH)NH_2$; m.w. 120.08; col. cr.; m.p. 80; s.w.; s.al.

benzamidine, N-1-naphthyl- (benzenylnaphthylamidine). $C_6H_5C(:NH)NH$-$C_{10}H_7$ or $C_6H_5C(NH_2):NC_{10}H_7$; m.w. 246.13; pl.f.al.; m.p. 141; i.w.; s.al.

benzamidoxime. See benzamide, oxime.

benzamine. See β-eucaine.

benzanalgen. See analgen.

benzanilide (N-phenylbenzamide; N-benzoylaniline). $C_6H_5CONHC_6H_5$; m.w. 197.09; col. leaf. f.al.; m.p. 161; b.p. 117-9 ^{10}; s.w.; s.al.

benzanilide, m-nitro-. $NO_2C_6H_5CONH$-C_6H_5; m.w. 242.09; leaf. f.w. or al.; m.p. 153-4; s.w.; s.al.

benzanilide, m'-nitro-. C_6H_5CONH-$C_6H_4NO_2$; m.w. 242.09; leaf. f. amyl al.; m.p. 157; i.w.; s.al.

benzanilide, o-nitro-. $NO_2C_6H_4CONH$-C_6H_5; m.w. 242.09; wh. need. f.al.; m.p. 155; s.w.; s.al.

benzanilide, o'-nitro-. C_6H_5CONH-$C_6H_4NO_2$; m.w. 242.09; yel. need. f.al.; m.p. 94-8; s.w.; s.al.

benzanilide, p-nitro-. $NO_2C_6H_4CONH$-C_6H_5; m.w. 242.09; leaf. f.et.; m.p. 210-11; s.w.; s.al.

benzanilide, p'-nitro-. C_6H_5CONH-$C_6H_4NO_2$; m.w. 242.09; yel. need.; m.p. 199; i.w.; s.al.

benzanilide, thio-. $C_6H_5CSNHC_6H_5$; m.w. 213.15; yel. pr. f.al.; m.p. 100-2; i.w.; s.al.

benzanilide, 3, 4, 5-trihydroxy-. See gallanilide.

benzaurin (p, p'-dihydroxytriphenylcarbinol). $C_6H_5(C_6H_4OH)_2COH$; or $C_6H_5(OHC_6H_4)C:C_6H_4:O$; m.w 292.12; or 274.11; brick red powd.; m.p. 100; s.w.; s.al.

benzazide. See benzoyl azide.

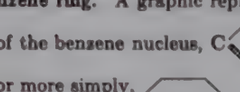
1-benzazine. See quinoline.

2-benzazine. See isoquinoline.

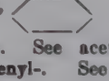
benzenarsonic acid, p-amino-. See arsanilic acid.

benzene (benzol; benzole; phene). C_6H_6; m.w. 78.05; col. rhomb. pr. or inflam. liq.; m.p. 5.48; b.p. 80.08; s.w.; s.al.; see benzene ring.

benzene ring. A graphic representation of the benzene nucleus,



or more simply,



benzene, acetyl-. See acetophenone.

benzene, acetylenyl-. See benzene, ethynyl-.

benzene, 1-allyl-3, 4-methylenedioxy-. See safrole.

benzene, amino-. See aniline. For derivatives of the aminobenzenes, see corresponding derivatives of aniline, e.g. 1-amino-3-bromobenzene is under aniline, m-bromo-.

benzene, aminodimethylamino-. See phenylenediamine, N, N-dimethyl-.

benzene, amoxy-. See ether, amyl phenyl.

benzene, amyl- (1-phenylpentane). $C_6H_5(CH_2)_4CH_3$; m.w. 148.12; col. liq.; m.p. -78.25; b.p. 202.1; i.w.; s.al.

benzene, sec-n-amyl-. See benzene, (α-methylbutyl)-.

benzene, tert-amyl- (2-methyl-2-phenylbutane). $C_6H_5C(CH_3)_2C_2H_5$; m.w. 148.12; liq.; b.p. 189-91; i.w.; s.al.

benzene, 1-amyl-2, 4-dihydroxy-. See resorcinol, 4-amyl-.

benzene, anilino-. See diphenylamine.

benzene arsonic acid, p-amino-. See arsanilic acid.

benzene azimide. See 1, 2, 3-benzotriazole.

benzene, azimino-. See 1, 2, 3-benzotriazole.

benzene azoaniline. See azobenzene, amino-.

benzene azoethane (ethaneazobenzene; ethylphenyldiimide). $C_6H_5N:NC_2H_5$; m.w. 134.09; lt. yel. oil.; s.w.; s.al.

benzene azomethane (methane azobenzene; methylphenyldiimide). C_6H_5-$N:NCH_3$; m.w. 120.08; yel. oil; b.p. 150; s.al.

benzeneazo-β-naphthol, p-nitro-. See 2-naphthol, 1-p-phenylazo-.

4-benzeneazo-α-naphthylamine. See 1-naphthylamine, 4-phenylazo-.

benzene, benzoyl-. See benzophenone.

benzene, benzyl-. See methane, diphenyl-.

benzene, 1-benzyl-4-ethyl- (p-ethyl-diphenylmethane). $C_6H_5CH_2C_6H_4C_2H_5$; m.w. 196.12; liq.; b.p. 294.5; s.al.

benzene, 1-benzyloxy-2-methoxy-4-propenyl-. See isoeugenol, benzyl ether.

benzene, 1-benzyl-2-phenyl-. See biphenyl, 2-benzyl-.

benzene, bromo- (phenyl bromide). C_6H_5Br; 156.96; col. oily liq.; m.p. -30.6; b.p. 155-6; s.w.; s.al.

benzene, 1-bromo-4-(4-bromophenoxy)-. See ether, bis-p-bromophenyl.

benzene, 1-bromo-3-chloro- (m-bromochlorobenzene). BrC_6H_4Cl; m.w. 191.40; m.p. -21.2; b.p. 196; i.w.; s.al.

benzene, 1-bromo-4-chloro- (p-bromochlorobenzene). BrC_6H_4Cl; m.w. 191.40; col. rhomb. or monocl. pr.; m.p. 67.4; b.p. 196.3; i.w.; s.al.

benzene, (α-bromoethyl)- (1-bromo-1-phenylethane). $CH_3CHBrC_6H_5$; m.w. 184.99; liq.; i.w.; s.al.

benzene, 1-bromo-4-fluoro- (p-fluorobromobenzene). BrC_6H_4F; m.w. 174.95; col. liq.; b.p. 152.5; i.w.; s.al.

benzene, 1-bromo-2-iodo-. BrC_6H_4I; m.w. 282.87; col. liq.; m.p. 2.1; b.p. 257 ^{754}; i.w.; s.al.

benzene, 1-bromo-3-iodo-. BrC_6H_4I; m.w. 282.87; col. oily liq.; m.p. -9.3; b.p. 252 ^{754}; i.w.; s.al.

benzene, 1-bromo-4-iodo-. BrC_6H_4I; m.w. 282.87; col. need. or pl.; m.p. 92; b.p. 251.5 ^{754}; i.w.; s.al.

benzene, 1-bromo-2-nitro-. BrC_6H_4-NO_2; m.w. 201.96; pa. yel. cr. f.al.; m.p. 42; b.p. 261; i.w.; s.al.

benzene, 1-bromo-3-nitro-. BrC_6H_4-NO_2; m.w. 201.96; rhomb. cr.; m.p. 56; b.p. 256.5; s.w.; s.al.

benzene, 1-bromo-4-nitro-. BrC_6H_4-NO_2; m.w. 201.96; col. rhomb. pr.; m.p. 127; b.p. 256; i.w.; s.al.

benzene, (β-bromovinyl)-. See styrene, β-bromo-.

benzene, butoxy-. See ether, butyl phenyl.

benzene, butyl- (1-phenylbutane). C_6H_5-$CH_2CH_2CH_2CH_3$; m.w. 134.11; col. liq.; m.p. -81.2; b.p. 180; i.w.; s.al.

benzene, sec-butyl- (2-phenylbutane). $C_6H_5CH(CH_3)C_2H_5$; m.w. 134.11; col. liq.; m.p. -82.7; b.p. 173.5; i.w.; s.al.

benzene, tert-butyl- (2-methyl-2-phenylpropane). $C_6H_5C(CH_3)_3$; m.w. 134.11; col. liq.; m.p. -58.1; b.p. 168.7; i.w.; s.al.

benzene, 1-tert-butyl-3, 5-dimethyl-2, 4, 6-trinitro- (musk xylene). $(NO_2)_3$-$C_6C(CH_3)_2(CH_3)_2$; m.w. 297.14; m.p. 113; i.w.; s.al.

benzene, butylmethyl-. See toluene, butyl-.

benzene, 1-butynyl- (1-phenyl-1 butyne; ethylphenylacetylene). $C_6H_5C:C$-CH_2CH_3; m.w. 130.08; b.p. 203; i.w.; s.al.

benzene carbonal. See benzaldehyde and the corresponding derivatives.

benzene carbonamide. See benzamide and the corresponding derivatives.

benzene carbonamidine. See benzamidine.

benzene carbonitrile. See benzonitrile and corresponding derivatives.

benzene carbonyl. For halogen derivatives see the corresponding benzoyl halides.

benzene carbothioic acid. See benzoic acid, thio-.

benzene carboxylic acid. See benzoic acid, and corresponding esters.
benzene carboxylic acid, 2-ethylamino-. See anthranilic acid, N-ethyl-.
benzene carboxylic acid, β-methylpropyl ester. See benzoic acid, isobutyl ester.
benzene, chloro- (phenyl chloride). C_6H_5Cl; m.w. 112.50; col. liq.; m.p. −45; b.p. 132; s.w.; s.al.
benzene, 1-chloro-2, 4-dinitro- (4-chloro-1, 3-dinitrobenzene). $(NO_2)_2C_6H_3Cl$; m.w. 202.50.; yel. rhomb. f.et.; m.p. α 53.4, β 43, γ 27; b.p. 315; i.w.; s.al.
benzene, 1-chloro-3, 5-dinitro- (5-chloro-1, 3-dinitrobenzene). $(NO_2)_2C_6H_3Cl$; m.w. 202.50; col. need. f.al.; m.p. 55; i.w.; s.al.
benzene, 4-chloro-1, 3-dinitro-. See benzene, 1-chloro-2, 4-dinitro-.
benzene, 5-chloro-1, 3-dinitro-. See benzene, 1-chloro-3, 5-dinitro-.
benzene, 2-chloro-1, 3-dinitro-. $(NO_2)_2C_6H_3Cl$; m.w. 202.50; yel. need. f.al.; m.p. 87.; b.p. 315; i.w.; s.al.
benzene, 3-chloro-1, 2-dinitro-. $(NO_2)_2C_6H_3Cl$; m.w. 202.50; pr. f.et. al.; m.p. 78; i.w.; s.al.
benzene, 4-chloro-1, 2-dinitro-. $(NO_2)_2C_6H_3Cl$; m.w. 202.50; yel. monocl. rhomb. f.et.; m.p. α 36.3, β 37.1, γ 38.8, δ 28; i.w.; s.al.
benzene, 1-chloro-4-iodo-. ClC_6H_4I; m.w. 238.41; col. leaf. f.al.; m.p. 57; b.p. 226-7; i.w.; s.al.
benzene, chloromercuri-. See mercury chloride, phenyl-.
benzene, 1-chloro-2-nitro- (o-chloronitrobenzene). $ClC_6H_4NO_2$; m.w. 157.50; monocl. need.; m.p. 32.5; b.p. 245.7; i.w.; s.al.
benzene, 1-chloro-3-nitro- (m-chloronitrobenzene). $ClC_6H_4NO_2$; m.w. 157.50; pale yel. rhomb. pr. f.al.; sp.gr. 1.534; m.p. unst. 23.7; stab. 44.4 (46); b.p. 235-6; i.w.; s.al.
benzene, 1-chloro-4-nitro- (p-chloronitrobenzene). $ClC_6H_4NO_2$; m.w. 157.50; monocl. pr.; m.p. 83.5; b.p. 242; i.w.; s.al.
benzene, 1-chloro-2, 4, 5-trinitro-. $(NO_2)_3C_6H_2Cl$; m.w. 247.50; yel. cr. f.al.; m.p. 116; i.w.; s.al.
benzene, 1-chloro-2, 4, 6-trinitro-. See picryl chloride.
benzene, 2-chloro-1, 3, 5-trinitro-. See picryl chloride.
benzene, cyclohexyl-. See cyclohexane, phenyl-.
benzene, 1, 4-diacetamido-. See o-phenylenediamine, N, N′-diacetyl-.
1, 2-benzenediacetonitrile (o-xylylene cyanide). $C_6H_4(CH_2CN)_2$; m.w. 156.08; col. cr.f.et.; m.p. 59-60; s.al.
1, 3-benzenediacetonitrile (m-xylylene cyanide). $C_6H_4(CH_2CN)_2$; m.w. 156.08; cr.; m.p. 28-9; i.w.; s.al.
1, 4-benzenediacetonitrile (p-xylylene cyanide). $C_6H_4(CH_2CN)_2$; m.w. 156.08; lng. pr.f.et. or need. f.w.; m.p. 98; s.w.; s.al.
benzenediamine. See phenylenediamine.
benzene, diamino-. See phenyldiamine.
benzene, diamyl-. $C_6H_4(C_5H_{11})_2$; m.w. 218.20; col.; sp.gr. 0.868 ^{20}; b.p. 255-280.
benzene, diazoamino-. See diazaminobenzene.
benzenediazoanilide. See diazoaminobenzene.
benzenediazoimide. See benzene, triazo-.
benzenediazonium chloride (diazobenzene chloride). $C_6H_5N(:N)Cl$; m.w. 140.51; col. need.; s.w.; s.al.
benzenediazonium cyanide (diazobenzene cyanide). $C_6H_5N(:N)CN$; m.w. 131.06; yel. pr.; m.p. 69; s.w.
benzenediazonium nitrate (diazobenzene nitrate). $C_6H_5N(:N)NO_3$; m.w. 167.06; col. need.; s.w.; s.al.
benzenediazonium tribromide (diazobenzene perbromide). $C_6H_5N(:N)Br_2$; m.w. 344.80; or. yel. tab. f.al.; i.w.; s.al.
benzene, 1, 2-dibromo- (o-dibromobenzene). $C_6H_4Br_2$; m.w. 235.86; col. liq.; m.p. 1.8; b.p. 221; i.w.; s.al.
benzene, 1, 3, dibromo- (m-dibromobenzene). $C_6H_4Br_2$; m.w. 235.86; col. liq.; m.p. −6.9; b.p. 219.5; i.w.; s.al.
benzene, 1, 4-dibromo- (p-dibromobenzene). $C_6H_4Br_2$; m.w. 235.86; col. monocl. f.al.; m.p. 86.9; b.p. 218-19; i.w.; s.al.
benzene, 1, 2-dibutoxy- (pyrocatechol dibutyl ether). $C_6H_4[O(CH_2)_3CH_3]_2$; m.w. 222.17; pa. yel. liq.; b.p. 135-8 ^{12}.
benzenedicarbinol. See xylylene glycol.
1, 2-benzenedicarbonal. See phthalaldehyde.
1, 3-benzenedicarbonal. See isophthaldehyde.
1, 4-benzenedicarbonal. See terephthaladehyde.
1, 3-benzenedicarbonitrile. See terephthalonitrile.
1, 4-benzenedicarbonitrile. See terephthalonitrile.
1, 2-benzenedicarbonyl chloride. See phthalyl chloride.
1, 3-benzenedicarbonyl chloride. See isophthalyl chloride.
1, 4-benzenedicarbonyl chloride. See terephthalyl chloride.
1, 2-benzenedicarboxylic acid. See phthalic acid.
1, 3-benzenedicarboxylic acid. See isophthalic acid.
1, 4-benzenedicarboxylic acid. See terephthalic acid.
benzene, 1, 2-dichloro- (o-dichlorobenzene). $C_6H_4Cl_2$; m.w. 146.95; col. liq.; m.p. −17.5; b.p. 180-3; s.w.; s.al.
benzene, 1, 3-dichloro- (m-dichlorobenzene). $C_6H_4Cl_2$; m.w. 146.95; col. liq.; m.p. −24.8; b.p. 172; s.w.; s.al.
benzene, 1, 4-dichloro- (p-dichlorobenzene). $C_6H_4Cl_2$; m.w. 146.95; monocl. lf. f.al.; m.p. 53; b.p. 173.4; s.w.; s.al.; mothproofing agent, insecticidal and germicidal compositions; deodorant; mfr. dyestuffs, intermediates.
benzene, 1, 3-dicyano-. See isophthalonitrile.
benzene, 1, 2-diethoxy- (pyrocatechol diethyl ether; catechol diethyl ether). $C_6H_4(OC_2H_5)_2$; m.w. 166.11; cr. f. pet. eth.; m.p. 43-5.
benzene, 1, 3-diethoxy- (resorcinol diethyl ether). $C_6H_4(OC_2H_5)_2$; m.w. 166.11; pr.; m.p. 12.4; b.p. 234-5; i.w.; s.al.
benzene, 1, 4-diethoxy- (hydroquinone diethyl ether). $C_6H_4(OC_2H_5)_2$; m.w. 166.11; leaf. b.p. 246; s.al.
benzene, 1, 2-diethyl- (o-diethylbenzene). $C_6H_4(C_2H_5)_2$; m.w. 134.11; col. liq.; m.p. < −20; b.p. 184.5; i.w.; s.al.
benzene, 1, 3-diethyl- (m-diethylbenzene). $C_6H_4(C_2H_5)_2$; m.w. 134.11; col. liq.; m.p. < −20; b.p. 182; i.w.; s.al.
benzene, 1, 4-diethyl- (p-diethylbenzene). $C_6H_4(C_2H_5)_2$; m.w. 134.11; col. liq.; m.p. −35; b.p. 183; i.w.; s.al.
benzene, (diethylamino) methyl-. See toluidine, N, N-diethyl-.
benzene, 1, 3-diethyl-5-methyl-. See toluene, 3, 5-diethyl-.
benzene, dihydro-. See cyclohexadiene.
benzene, 1, 2-dihydroxy-. See pyrocatechol.
benzene, 1, 3-dihydroxy-. See resorcinol.
benzene, 1, 4-dihydroxy-. See hydroquinone.
benzene, 1, 2-diiodo- (o-diidobenzene). $C_6H_4I_2$; m.w. 329.87; monocl. pl. or pr.f. lgr.; m.p. 27; b.p. 286-7; s.w.; s.al.
benzene, 1, 3-diiodo- (m-diidobenzene). $C_6H_4I_2$; m.w. 329.87; rhomb. pl. f.al.-et.; m.p. 40; b.p. 284.8; i.w.; s.al.
benzene, 1, 4-diido- (p-diiodobenzene). $C_6H_4I_2$; m.w. 329.87; rhomb. lf. fr. al.; m.p. 129.4; i.w.; s.al.
benzene, 1, 3-diisoamoxy- (resorcinol diisoamyl ether). $C_6H_4[OCH_2CH_2CH(CH_3)_2]_2$; m.w. 250.20; cr. f.w.; m.p. 47.
benzene, 1, 2-dimethoxy-. See veratrole.
benzene, 1, 3-dimethoxy- (resorcinol dimethyl ether). $C_6H_4(OCH_3)_2$; m.w. 138.08; col. liq.; m.p. −52; b.p. 216.5-217.7; s.w.; s.al.
benzene, 1, 4-dimethoxy- (hydroquinone dimethyl ether). $C_6H_4(OCH_3)_2$; m.w. 138.08; col. leaf. f.w.; m.p. 56; b.p. 212.6; i.w.; s.al.
benzene, 1, 2-dimethyl-. See o-xylene.
benzene, 1, 3-dimethyl-. See m-xylene.
benzene, 1, 4-dimethyl-. See p-xylene.
benzene, 1, 2-dinitro- (o-dinitrobenzene). $C_6H_4(NO_2)_2$; m.w. 168.05; col.-yel. monocl. pl. f.al.; m.p. 118; b.p. 319 ^{770}; s.w.; s.al.
benzene, 1, 3-dinitro- (m-dinitrobenzene). $C_6H_4(NO_2)_2$; m.w. 168.05; col.-ylsh. rhomb. need. or pl. f.al.; m.p. 89.57; b.p. 302.8 ^{770}; s.w.; s.al.
benzene, 1, 4-dinitro- (p-dinitrobenzene). $C_6H_4(NO_2)_2$; m.w. 168.05; col.-yel. monocl. need. f.al.; m.p. 173-4; s.w.; s.al.
1, 2-benzenediol. See pyrocatechol.
1, 3-benzenediol. See resorcinol.
1, 4-benzenediol. See hydroquinone.
benzene, 1, 3-diphenyl- (m-phenylbiphenyl; m-terphenyl). $(C_6H_5)_2C_6H_4$; m.w. 230.11; need. f.al.; m.p. 86-7; b.p. 363; i.w.; s.al.
benzene, 1, 4-diphenyl-. See terphenyl.
benzene, 1, 2-dipropoxy- (pyrocatechol dipropyl ether). $C_6H_4(OCH_2CH_2CH_3)_2$; m.w. 194.14; b.p. 117-20 ^{12}.
benzene, 1, 3-dipropoxy- (resorcinol dipropyl ether). $C_6H_4(OCH_2CH_2CH_3)_2$; m.w. 194.14; liq.; b.p. 251.
1, 3-benzenedithiol. See resorcinol; dithio-.
1, 4-benzenedithiol. See hydroquinone, dithio.
benzene, ethenoxy-. See ether, phenyl vinyl.
benzene, ethoxy-. See phenetole.
benzene, 1-ethoxy-2-methoxy-4-propenyl-. See isoeugenol, ethyl ether.
benzene, ethyl- (phenylethane). $C_2H_5C_6H_5$; m.w. 106.08; col. liq.; m.p. −93.9; b.p. 136.15; s.w.; s.al.
benzene, 1-ethyl-4-isobutyl-. $C_2H_5C_6H_4CH_2CH(CH_3)_2$; m.w. 162.14; liq.; b.p. 209-13; i.w.
benzene, 1-ethyl-3-isopropyl-. $C_2H_5C_6H_4CH(CH_3)_2$; m.w. 148.12; liq.; m.p. < −20; b.p. 190-2; i.w.
benzene, 1-ethyl-4-isopropyl-. $C_2H_5C_6H_4CH(CH_3)_2$; m.w. 148.12; liq.; m.p. < −20; b.p. 197-8; i.w.
benzene, ethylmethyl-. See toluene, ethyl-.
benzene, 1-ethyl-2-nitro-. $NO_2C_6H_4C_2H_5$; m.w. 151.08; col. liq.; m.p. −23; b.p. 223-4; i.w.; s.al.
benzene, 1-ethyl-3-nitro-. $NO_2C_6H_4C_2H_5$; m.w. 151.08; col. liq.; b.p. 242-3; i.w.; s.al.
benzene, 1-ethyl-4-nitro-. $NO_2C_6H_4C_2H_5$; m.w. 151.08; col. liq.; m.p. −32; b.p. 241-2; i.w.; s.al.
benzene, 1-ethyl-4-propyl-. $C_2H_5C_6H_4(CH_2)_2CH_3$; m.w. 148.12; liq.; b.p. 202-5 ^{745}; i.w.
benzene, ethyl sulfonyl-. See sulfone, ethyl phenyl.
benzene, ethynyl- (phenylacetylene; acetylenyl benzene). $C_6H_5C{:}CH$; m.w. 102.05; col. liq.; m.p. −40 to −48; b p. 143; i.w.; s.al.
benzene, fluoro-. C_6H_5F; m.w. 96.04; col. liq.; m.p. −41.2; b.p. 86; s.w.; s.al.
benzene, p-fluorobromo-. See benzene, 1-bromo-4-fluoro-.
benzene, 1-fluoro-4-iodo-. FC_6H_4I; m.w. 221.95; col. liq.; b.p. 182.4; i.w.; s.al.
benzene, hexabromide. See cyclohexane, 1, 2, 3, 4, 5, 6-hexabromo-.
benzene, hexabromo- (perbromobenzene). C_6Br_6; m.w. 551.50; monocl. need. f.bz.; m.p. 306; i.w.; i.al.
benzene hexacarboxylic acid. See mellitic acid.
benzene, hexachloride. See hexane, 1, 2, 3, 4, 5, 6-hexachl
benzene, hexachloro- (perchlorobenzene). C_6Cl_6; m.w. 284.74; mono rhomb. pr.; m.p. 227; b.p. 326; s.al.
benzene, hexaethyl-. $C_6(C_2H_5)_6$; 246.23; col. monocl. f.al.; m.p. b.p. 298; i.w.; s.al.
benzene, hexahydro-. See cyclohex
benzene, hexahydroxy- (benzene he $C_6(OH)_6$; m.w. 174.05; need. f. s.w.; s.al.
benzene, hexaiodo- (periodobenze C_6I_6; m.w. 833.52; red-br. need. f. i.w.; i.al.
benzene, hexamethyl-. $C_6(CH_3)_6$; 162.14; col. rhomb. pl. f.al.; 166; b.p. 265; i.w.; s.al.
benzene hexol. See benzene he hydroxy-.
benzene, hexyloxy-. See ether, he phenyl.
benzene, hydroxy-. See phenol.
benzeneindone. See aposafranone.
benzene, iodo- (phenyl iodide). C_6H m.w. 203.96; col. liq.; m.p. −3 b.p. 188.6; s.w.; s.al.
benzene, 1-iodo-2-nitro-. NO_2C_6H m.w. 248.96; yel. rhomb. need.; m 49.4; b.p. 290; i.w.; s.al.
benzene, 1-iodo-3-nitro-. NO_2C_6H m.w. 248.96; col. cr.; m.p. 36; b 280; i.w.; s.al.
benzene, 1-iodo-4-nitro-. NO_2C_6H m.w. 248.96; col. nced.; m.p. 171 b.p. 288.1; i.w.; s.al.
benzene, iodoso-. C_6H_5IO; m.w. 219. yel. powd.; s.w.; s.al.
benzene, iodoxy-. $C_6H_5IO_2$; m.w. 23 96; need. f.w.; s.w.; i.al.
benzene, isoallyl-. See benzen propenyl-.
benzene, isoamoxy-. See ether, isoam phenyl.
benzene, isoamyl- (3-methyl-1-pheny butane). $C_6H_5(CH_2)_2CH(CH_3)_2$; m. 148.12; col. liq.; b.p. 194; i.w.; s.
benzene, isobutoxy-. See ether, i butyl phenyl.
benzene, isobutyl- (2-methyl-1-pheny propane). $C_6H_5CH_2CH(CH_3)_2$; m. 134.11; col. liq.; b.p. 171.4; i.w.; s.
benzene, isohexyl- (4-methyl-1-pheny pentane). $C_6H_5(CH_2)_2CH(CH_3)_2$; m.w. 162.14; liq.; b.p. 214-5; i.w.; s.
benzene, isopropenyl- (2-phenylpropen uns-methylphenylethylene). $CH_3C(C_6H_5){:}CH_2$; m.w. 118.08; col. liq b.p. 160.5-1.5; i.w.; s.al.
benzene, isopropoxy-. See ether, i propyl phenyl.
benzene, isopropyl-. See cumene.
benzene, isopropylmethyl-. See cymen
benzene, methoxy-. See anisole and th corresponding derivatives.
benzene, 1-methoxy-4-propenyl-. S anethole.
benzene, methyl-. See toluene.
benzene, (α-methylbutyl)-. (2-pheny pentane; sec-n-amylbenzene). $C_6H_5CH(CH_3)CH_2CH_2CH_3$; m.w. 148.1 liq.; b.p. 189.3; i.w.; s.al.
benzene, 3, 4-methylenedioxy-1-pro penyl-. See isosafrole.
benzene, (β-methylpropoxy)-. See ethe isobutyl phenyl.
benzene, methylpropyl-. See toluen propyl-.
benzene, nitro-. $C_6H_5NO_2$; m.w. 123.0 yel. liq.; m.p. 5.7; b.p. 210.9; s.w.; s.a
benzene, nitroso-. C_6H_5NO; m.w. 107 05; col. rhomb. or monocl. f.et.; m. 68; b.p. 59 ^{10}; i.w.; s.al.
benzene, pentaamino-. See benzen pentamine.
benzene, pentabromo-. C_6HBr_5; m.w 472.59; need. f.al.; m.p. 293; s.al.
benzenepentacarboxylic acid $C_6H(COOH)_5$; m.w. 298.05; rhomb m.p. 238; s.w.; s.al.
benzene, pentachloro-. C_6HCl_5; m.w 250.29; need. f.al.; m.p. 86; b.p. 27 i.w.; s.al.
benzene, pentaethyl-. $(C_2H_5)_5C_6H_$; m w. 218.20; col. liq.; m.p. < −20; b. 277; i.w

ne, pentaiodo-. C_6HI_5; m.w. .61; need. f.al.; m.p. 172; i.w.; s.al.

ene, pentamethyl-. $(CH_3)_5C_6H$; w. 148.12; col. pr. f. dil. al.; m.p. 53; . 230; i.w.; s.al.

ene pentamine (pentaaminoben- ne). $C_6H(NH_2)_5$; m.w. 153.13; ed.; s.w.; i.al.

ene, perbromo-. See benzene, hexa- omo-.

ene, perchloro-. See benzene, hexa- loro-.

ene, periodo-. See benzene, hexa- do-.

ene, phenoxy-. See phenyl ether.

ene, phenyl-. See biphenyl.

ene, phenyldithio-. See phenyl lfide.

ene, (2-propenoxy)-. See ether, lyl phenyl.

zene, propenyl- (1-phenylpropene; propenylbenzene; isoallylbenzene). $H_3CH{:}CHC_6H_5$; m.w. 118.08; col. q.; b.p. 175; i.w.; s.al.

zene, propoxy-. See ether, phenyl ropyl.

zenepropionic acid. See hydrocin- amic acid.

zene, propyl- (1-phenylpropane). $C_6H_5CH_2CH_2CH_3$; m.w. 120.09; col. q.; m.p. −101.6; b.p. 159.45; s.w.; al.

zene, 1-propynyl-. See propyne, -phenyl-.

zenesiliconic acid (silicobenzoic acid). C_6H_5SiOOH; m.w. 138.11; glassy f.et.; n.p. 92; i.w.

zenesulfanilide. See benzene- ulfonanilide.

zene sulfide. See phenyl sulfide.

zenesulfinic acid. $C_6H_5SO_2H$; m.w. 42.11; pr.f.w.; m.p. 84; s.w.; s.al.

zenesulfonamide (benzenesulfonic mide). $C_6H_5SO_2NH_2$; m.w. 157.12.; nonocl. need. f.w. or pl.f.al.; m.p. 56; s.w.; s.al.

nzene sulfonanilide (benzenesulfani- ide). $C_6H_5SO_2NHC_6H_5$; m.w. 233.15; etr. pr.; m.p. 110; s.w.; s.al.

nzene sulfone. See phenyl sulfone.

nzene sulfone chloride. See benzene ulfonyl chloride

nzenesulfonic acid. $C_6H_5SO_3H$; m.w. 158.11; col. leaf. or need.; m.p. +1.5 H_2O 43-4, anh. 50-1; b.p. 137; s.w.; s.al.

nzenesulfonic amide. See benzene- ulfonamide.

nzenesulfonic acid, m-amino-. See metanilic acid.

nzenesulfonic acid, o-amino-. See orthanilic acid.

nzenesulfonic acid, p-amino-. See ulfanilic acid.

nzenesulfonic acid, p-(4-amino-1- naphthylazo)-. $SO_2HC_6H_4N{:}NC_{10}H_6$- NH_2; m.w. 327.19; vlt. need.; i.w.; s.al.

nzenesulfonic acid, o-bromo-. BrC_6H_4- SO_3H; m.w. 237.02; deliq. need.; s.w.; s.al.

nzenesulfonic acid, p-bromo-. BrC_6H_4- SO_3H; m.w. 237.02; deliq. need.; m.p. 102-3; b.p. 155 [25]; s.w.; s.al.

nzenesulfonic acid, p-chloro-. ClC_6H_4- SO_3H; m.w. 192.56; deliq. need.; m.p. 68; b.p. 147-8 [25]; s.w.; s.al.

nzenesulfonic acid, p- (p-dimethyl- aminophenylazo)-, sodium salt. See methyl orange.

nzenesulfonic acid, o-formyl- (o- benzaldehydesulfonic acid). C_6H_5- $(CHO)SO_3H$; m.w. 187.11; m.p. 114; s.w.

nzenesulfonic acid, methyl-. See toluenesulfonic acid.

nzenesulfonic acid, o-nitro-. NO_2- $C_6H_4SO_3H$; m.w. 203.11; leaf. m.p. 70; s.w.; s.al.

nzenesulfonic acid, sodium salt. C_6H_5- SO_3Na; m.w. 180.10; need. f.w.; s.w.; s.al.

nzenesulfonic amide. See benzene- sulfonamide.

nzenesulfonic chloride. See benzene sulfonyl chloride.

nzenesulfonyl chloride (benzenesul- fonic chloride; benzenesulfone chloride). $C_6H_5SO_2Cl$; m.w. 176.56; rhomb. cr. or col. oily liq.; m.p. 14.5; i.w.; s.al.

benzenesulfonyl chloride, p-bromo-. $BrC_6H_4SO_2Cl$; m.w. 255.46; tricl. or monocl. f.et.; m.p. 75; b.p. 153 [15]; i.w.

benzene, 1, 2, 3, 5-tetrabromo-. $C_6H_2Br_4$; m.w. 393.68; need. f.al.; m.p. 98.5; b.p. 329; i.w.; s.al.

benzene, 1, 2, 4, 5-tetrabromo-. $C_6H_2Br_4$; m.w. 393.68; monocl. pr.f. CS_2; m.p. 178; i.w.; s.al.

1, 2, 3, 4-benzenetetracarboxylic acid. See mellophanic acid.

1, 2, 3, 5-benzenetetracarboxylic acid. See prehnitic acid.

1, 2, 4, 5-benzenetetracarboxylic acid. See pyromellitic acid.

benzene, 1, 2, 3, 4-tetrachloro-. $C_6H_2Cl_4$; m.w. 215.84; need.; m.p. 47.5; b.p. 254; i.w.; s.al.

benzene, 1, 2, 3, 5-tetrachloro-. $C_6H_2Cl_4$; m.w. 215.84; need. f.al.; m.p. 51; b.p. 246; s.w.; s.al.

benzene, 1, 2, 4, 5-tetrachloro-. $C_6H_2Cl_4$; m.w. 215.84; monocl. need. f.et.; m.p. 138; b.p. 246; i.w.; s.al.

benzene, 1, 2, 3, 4-tetraethyl-. $(C_2H_5)_4$- C_6H_2; m.w. 190.17; liq.; b.p. 254; i.w.; s.al.

benzene, 1, 2, 4, 5-tetraethyl-. $(C_2H_5)_4$- C_6H_2; m.w. 190.17; col. liq. or cr.; m.p. 13; b.p. 250; i.w.; s.al.

benzene, tetrahydro-. See cyclohexene.

benzene, tetrahydroxy-. See benzene- tetrol.

benzene, 1, 2, 3, 4-tetraiodo-. $C_6H_2I_4$; 581.70; pr.f.et.; m.p. 148; i.w.; s.al.

benzene, 1, 2, 3, 5-tetraiodo-. $C_6H_2I_4$; m.w. 581.70; pr.f.et.; m.p. 148; i.w.; s.al.

benzene, 1, 2, 4, 5-tetraiodo-. $C_6H_2I_4$; m.w. 581.70; need. f.et.; m.p. 254; i.w.; s.al.

benzene, 1, 2, 3, 4-tetramethyl-. See prehnitene.

benzene, 1, 2, 3, 5-tetramethyl-. See isodurene.

benzene, 1, 2, 4, 5-tetramethyl-. See durene.

1, 2, 3, 5-benzenetetrol (1, 2, 3, 5-tetrahydroxybenzene). $C_6H_2(OH)_4$; m.w. 142.05; need. f.w.; m.p. 165; s.w.; s.al.

1, 2, 4, 5-benzenetetrol. $C_6H_2(OH)_4$; m.w. 142.05; leaf. f.ac.a.; m.p. 220; s.w.; s.al.

benzenethiol. See phenol, thio-.

1, 2, 3-benzenetriamine (vic-triaminobenzene). $C_6H_3(NH_2)_3$; m.w. 123.09; cr.; m.p. 103; b.p. 336; s.w.; s.al.

1, 2, 4-benzenetriamine (asym-triaminobenzene). $C_6H_3(NH_2)_3$; m.w. 123.09; leaf. f. chl.; m.p. 100; b.p. 340; s.w.; s.al.

benzene, triamino-. See benzenetriamine.

benzene, triazo- (diazobenzene imide; phenylazoimide). $C_6H_5N_3$; m.w. 119.06; yel. oil; i.w.; s.al.

benzene, 1, 2, 3-tribromo- (v-tribromobenzene). $C_6H_3Br_3$; m.w. 314.77; col. monocl. pr. f.al.; m.p. 87.4; i.w.; s.al.

benzene, 1, 2, 4-tribromo- (as-tribromobenzene). $C_6H_3Br_3$; m.w. 314.77; need. f.al.; m.p. 44; b.p. 276; i.w.; s.al.

benzene, 1, 3, 5-tribromo- (sym-tribromobenzene). $C_6H_3Br_3$; m.w. 314.77; need. f.al.; m.p. 119-21; b.p. 278; i.w.; s.al.

1, 2, 3-benzenetricarboxylic acid. See hemimellitic acid.

1, 2, 4-benzenetricarboxylic acid. See trimellitic acid.

1, 3, 5-benzenetricarboxylic acid. See trimesic acid.

benzene, 1, 2, 3-trichloro- (v-trichlorobenzene). $C_6H_3Cl_3$; m.w. 181.39; pl. f.al.; m.p. 52; b.p. 219; i.w.; s.al.

benzene, 1, 2, 4-trichloro- (as-trichlorobenzene). $C_6H_3Cl_3$; m.w. 181.39; col. rhomb.; m.p. 17; b.p. 213; i.w.; s.al.

benzene, 1, 3, 5-trichloro- (sym-trichlorobenzene). $C_6H_3Cl_3$; m.w. 181.39; lng. need.; m.p. 63; b.p. 208.5; i.w.; s.al.

benzene, 1, 3, 5-triethoxy- (phloroglucinol triethyl ether). $C_6H_3(OC_2H_5)_3$; m.w. 210.14; col. cr.; m.p. 43; b.p. 175 [24]; i.w.; s.al.

benzene, 1, 2, 4-triethyl- (as-triethylbenzene). $(C_2H_5)_3C_6H_3$; m.w. 162.14; arom. liq.; b.p. 218; i.w.; s.al.

benzene, 1, 3, 5-triethyl- (sym-triethylbenzene). $(C_2H_5)_3C_6H_3$; m.w. 162.14; col. liq.; b.p. 218; i.w.; s.al.

benzene, 1, 3, 5-trihydroxamino-. See 1, 3, 5-cyclohexanetrione, trioxime.

benzene, 1, 2, 3-trihydroxy-. See pyrogallol.

benzene, 1, 2, 4-trihydroxy-. See 1, 2, 4-benzenetriol.

benzene, 1, 3, 5-trihydroxy-. See phloroglucinol.

benzene, 1, 2, 3-triiodo- (v-triiodobenzene). $C_6H_3I_3$; m.w. 455.78; need. f.ac.a.; m.p. 184; i.w.; s.al.

benzene, 1, 2, 4-triiodo- (as-triiodobenzene). $C_6H_3I_3$; m.w. 455.78; need. f.al.; m.p. 91; i.w.; s.al.

benzene, 1, 3, 5-triiodo- (sym-triiodobenzene). $C_6H_3I_3$; m.w. 455.78; need. f.ac.a.; m.p. 184; i.w.; s.al.

benzene, 1, 2, 3-trimethoxy- (pyrogallol trimethyl ether). $(CH_3O)_3C_6H_3$; m.w. 168.09; col. rhomb. need. f. dil. al.; m.p. 47; b.p. 241; s.al.

benzene, 1, 3, 5-trimethoxy- (phloroglucinol trimethyl ether). $C_6H_3(OCH_3)_3$; m.w. 168.09; col. pr.f.al.; m.p. 54-5; b.p. 255.5; i.w.; s.al.

benzene, 1, 2, 4-trimethoxy-5-propenyl- (asaron). $CH_3CH{:}CHC_6H_3(OCH_3)_3$.

benzene, 1, 2, 3-trimethyl-. See hemimellitene.

benzene, 1, 2, 4-trimethyl-. See pseudocumene.

benzene, 1, 3, 5-trimethyl-. See mesitylene.

benzene, 1, 2, 3-trinitro- (v-trinitrobenzene). $C_6H_3(NO_2)_3$; m.w. 213.05; lt. grn. pr. f.al.; m.p. 127.5; i.w.; s.al.

benzene, 1, 2, 4-trinitro- (as-trinitrobenzene). $C_6H_3(NO_2)_3$; m.w. 213.05; col.-yel. cr.; m.p. 61.0; s.w.; s.al.

benzene, 1, 3, 5-trinitro- (sym-trinitrobenzene). $C_6H_3(NO_2)_3$; m.w. 213.05; col.-yel. rhomb. pl.f.bz.; m.p. 61; s.w.; s.al.

1, 2, 3-benzenetriol. See pyrogallol.

1, 2, 4-benzenetriol (hydroxyquinol; hydroxyhydraquinone). $C_6H_3(OH)_3$; m.w. 126.05; col. monocl. leaf. f.w. or et.; m.p. 140.5; s.w.; s.al.

1, 3, 5-benzenetriol. See phloroglucinol.

benzene, 1, 3, 5-triphenyl- (sym-triphenylbenzene). $(C_6H_5)_3C_6H_3$; m.w. 306.14; rhomb. tab. f.et.; m.p. 170; s.al.

1, 3, 5-benzenetrisulfonic acid. C_6H_3- $(SO_3H)_3$; m.w. 318.23; deliq. cr. $+3H_2O$; s.w.

benzene, vinyl-. See styrene.

benzenoid. Pertaining to a structure of carbon atoms resembling that of benzene.

benzenylamidine. See benzamidine.

benzenylaminoxide. See benzamide, oxime.

benzenylnaphthylamidine. See benzamidine, N-1-naphthyl-.

benzenylphenyleneamidine. See benzimidazole.

benzfuran. See benzofuran.

benz(o) hydrazide. See benzoic acid, hydrazide.

benzhydrol. See benzohydrol.

benzidine (p, p'-bianiline; 4, 4'-diaminobiphenyl). $NH_2C_6H_4C_6H_4NH_2$; m.w. 184.11; wh. or sltly. redsh. cr. powd. or leaf. f.w.; m.p. 128; b.p. 401.7; s.w.; s.al.

benzidine, 3-amino- (o-amino-p, p'-diaminobiphenyl). $(NH_2)_2C_6H_3C_6H_4$- NH_2; m.w. 199.13; need.; m.p. 134.

benzidine, N, N'-diacetyl- (p, p'-biacetanilide). $(CH_3CONHC_6H_4)_2$; m.w. 268.14; need. f.ac.a.; m.p. 331; i.w.; s.al.

benzidine, 2, 2'-dimethoxy-. See 4, 4'-bi-o-anisidine.

benzidine, 2, 2'-dimethyl-. See o-tolidine.

benzidine, N, N'-diphenyl-. $[C_6H_4NH$- $C_6H_5]_2$; m.w. 336.17; leaf. f. tol.; m.p. 242; i.w.; s.al.

3, 3'-benzidinedisulfonic acid (NH_2 = 1). (4, 4'-diamino-2-2'-biphenyldisulfonic acid). $(NH_2)_2C_{12}H_6(SO_3H)_2$; m.w. 344.23; monocl. pr.f.w.; s.w.; s.al.

benzidine, 2-ethoxy- (3-ethoxybenzidine; 4, 4'-diamino-3-ethoxybiphenyl). $NH_2C_6H_4C_6H_3(OC_2H_5)NH_2$; m.w. 228.14; glit. flat need.; m.p. 134; s.w.; s.al.

benzidine, 3-ethoxy-. See benzidine, 2-ethoxy-.

benzidine sulfate. $C_{12}H_{12}N_2 \cdot H_2SO_4$; sparingly soluble in water and alcohol; wh. cryst. powder; used in organic synthesis.

benzidine sulfone (dibenzothiophene-2, 7-diamine 9-dioxide; 2, 7, diaminobiphenylene sulfone). $(NH_2C_6H_3)_2SO_2$; m.w. 246.15; yel. pl.; m.p. >350; i.w.; i.al.

benzil (diphenylglyoxal; bibenzoyl; dibenzoyl; diphenyl diketone). C_6H_5- $COCOC_6H_5$; m.w. 210.08; yel. rhomb. need. f.al.; m.p. 95; i.w.; s.al.

benzilam. See oxazole, triphenyl-.

benzil bisphenyl hydrazone. See benzil.

benzil syn-bisphenyl hydrazone. See benzil, syn(or α) -osazone.

benzil, α- or anti-dioxime. $(C_6H_5$- $C{:}NOH)_2$; m.w. 240.11; leaf.; i.w.; s.al.

benzil, β- or syn-dioxime. $(C_6H_5$- $C{:}NOH)_2$; m.w. 240.11; need. (+al.) f.al.; s.w.; s.al.

benzil, γ- or amph.-dioxime. $(C_6H_5$- $C{:}NOH)_2$; m.w. 240.11; need. (+al.) f.al.; m.p. −al., 100; 164-5; i.w.; s.al.

benzilic acid (diphenylglycolic acid). $(C_6H_5)_2COHCOOH$; m.w. 228.09; monocl. need. f.w.; m.p. 150; s.w.; s.al.

benzil, α-mono-oxime. C_6H_5COC- $(:NOH)C_6H_5$; m.w. 225.09; lust. pl.f.al.; m.p. 137-8; s.w.; s.al.

benzil, β-mono-oxime. C_6H_5COC- $(:NOH)C_6H_5$; m.w. 225.09; need. f.bz.; m.p. 113-4; s.w.; s.al.

benzil, syn (or α) -osazone (benzil syn-bisphenylhydrazone). $(C_6H_5C{:}NNH$- $C_6H_5)_2$; m.w. 390.20; yel. need.; m.p. 208; s.al.

benzil, anti (or β)-osazone (benzil bisphenylhydrazone). $(C_6H_5C{:}NNH$- $C_6H_5)_2$; m.w. 390.20; need.; m.p. 225; i.w.; s.al.

benzimidazole (benzoglyoxaline). C_6H_4- NHCH:N; m.w. 118.06; rhomb. pl.f.al.; m.p. 170; b.p. <360; s.w.; s.al.

benzimidazole, 2-phenyl- (2-phenyl benzolglyoxaline; benzylphenyleneamidine). $C_6H_4NHC(C_6H_5{:}N$; m.w. 194.09; tab. f.ac.a.; need. f.w.; m.p. 280; s.w.; s.al.

2(3)-benzimidazolone (phenyleneurea). $C_6H_4NHCONH$; m.w. 134.06; plates; m.p. 305; s.w.; s.al.

benzine. A mixture of the lighter constituents of petroleum obtained by fractional distillation and used as a solvent. Not to be confused with benzene (q.v.)

benzine point. A measure of the purity of castor oil using benzine as a solvent.

benzocaine (ethyl p-aminobenzoate; anaesthesin). $NH_2C_6H_4COOC_2H_5$; m.w. 165.09; col. pr. f.al. or rhomb. f.et.; m.p. 91-2; s.w.; s.al.

1, 3-benzodiazine. See quinazoline.

1, 4-benzodiazine. See quinoxaline.

benzodifluorochloride. See toluene, α-

chloro-α, α-difluoro-.

benzofuran (coumarone; benzfuran). $C_6H_4OCH{:}CH$; m.w. 118.05; liq.; m.p. <-18; b.p. 174; i.w.; s.al.

2-benzofurancarboxylic acid. See coumarilic acid.

benzofurane resin. See coumarone resin.

benzoglyoxaline. See benzimidazole.

benzohydrazide. See benzoic acid, hydrazide.

benzohydrol (diphenylcarbinol; benzhydrol). $(C_6H_5)_2CHOH$; m.w. 184.09; silky need. f.lgr.; m.p. 68-9; b.p. 298.5; s.w.; s.al.

benzohydrol, p-amino- (p-aminodiphenylcarbinol). $C_6H_5CHOHC_6H_4NH_2$; m.w. 199.11; need. f.bz. or h.w.; m.p. 121; s.w.; s.al.

benzohydrol, p, p′-bisdimethylamino- (Michler's hydrol; tetramethyl-4, 4′-diaminobenzohydrol). $HOCH[C_6H_4N(CH_3)_2]_2$; m.w. 270.19; col. tricl. pr.f.bz.; m.p. 96; i.w.; s.al.

p-benzohydrol carboxylic acid. See benzoic acid, p-(α-hydroxybenzyl)-.

benzohydrol ether. See benzohydryl ether.

benzohydrol, tetramethyl-4, 4′-diamino-. See benzohydrol, p, p′-bis dimethylamino-.

benzohydroxamic acid. $C_6H_5C(:NOH)OH$; m.w. 137.06; rhomb. lvs.; m.p. 125; s.w.; s.al.

benzohydrylamine (α-aminodiphenylmethane). $(C_6H_5)_2CHNH_2$; m.w. 183.11; hex. pl. or liq.; m.p. 34; b.p. 288; s.w.

benzohydryl ether (benzohydrol. ether). $[(C_6H_5)_2CH]_2O$; m.w. 350.17; monocl. f.bz.; m.p. 109-11; s.al.

benzoic acid (benzenecarboxylic acid; phenylformic acid). C_6H_5COOH; m.w. 122.05; col. monocl. leaf. or need.; m.p. 122; b.p. 249; s.w.; s.al.

benzoic acid, m-acetamido-. $CH_3CONHC_6H_4COOH$; m.w. 179.08; need. f.al.; m.p. 249-50; s.w.; s.al.

benzoic acid, o-acetamido-. See anthranilic acid, N-acetyl-.

benzoic acid, p-acetamido-. $CH_3CONHC_6H_4COOH$; m.w. 179.08; need.; m.p. 250-2; s.w.; s.al.

benzoic acid, o-acetoxy-. See aspirin.

benzoic acid, o-acetyl- (o-acetophenone carboxylic acid). $CH_3COC_6H_4COOH$; m.w. 164.06; cr.f.w.; m.p. 114-5; s.w.

benzoic acid, p-acetyl-. $CH_3COC_6H_4COOH$; m.w. 164.06; need. f.h.w.; m.p. 200; s.w.; s.al.

benzoic acid, allyl ester (allyl benzoate). $C_6H_5COOC_3H_5$; m.w. 162.08; yel. liq.; b.p. 230; i.w.; s.al.

benzoic acid, m-amino-. $NH_2C_6H_4COOH$; m.w. 137.06; yel. need.; m.p. 174; s.w.; s.al.

benzoic acid, o-amino-. See anthranilic acid and corresponding derivatives.

benzoic acid, p-amino-. $NH_2C_6H_4COOH$; m.w. 137.06; yelsh.-red monocl.; m.p. 187; s.w.; s.al.

benzoic acid, p-amino-, butyl ester. See butesin.

benzoic acid, p-amino-, β-diethyl-aminoethyl ester, hydrochloride. See procaine, hydrochloride.

benzoic acid, p-amino-, ethyl ester. See benzocaine.

benzoic acid, amino-hydroxy-. See hydroxylamine benzoate.

benzoic acid, p-amino-, methyl ester. $NH_2C_6H_4COOCH_3$; m.w. 151.08; col. leaf.; m.p. 112.

benzoic acid, 3-amino-2-nitro-. $NH_2(NO_2)C_6H_3COOH$; m.w. 182.06; yel. need. f.w.; m.p. 156-7; s.w.; s.al.

benzoic acid, 3-amino-4-nitro-. $NH_2(NO_2)C_6H_3COOH$; m.w. 182.06; red. leaf. f.al.; s.w.; s.al.

benzoic acid, 3-amino-5-nitro-. $NH_2(NO_2)C_6H_3COOH$; m.w. 182.06; yel. pr. f.w.; m.p. 208; s.w.; s.al.

benzoic acid, 3-amino-6-nitro-. See benzoic acid, 5-amino-2-nitro-.

benzoic acid, 4-amino-2-nitro-. $NH_2(NO_2)C_6H_3COOH$; m.w. 182.06; red. need. f.w.; s.w.; s.al.

benzoic acid, 4-amino-3-nitro-. $NH_2(NO_2)C_6H_3COOH$; m.w. 182.06; red.-yel. need. f.al.; m.p. 284; i.w.; s.al.

benzoic acid, 5-amino-2-nitro- (3-amino-6-nitrobenzoic acid). $NH_2(NO_2)C_6H_3COOH$; m.w. 182.06; yel. need. or pr.; s.w.; s.al.

benzoic acid, amyl ester. $C_6H_5COOC_5H_{11}$; m.w. 192.12; sp.gr. 0.988 ^{20}; b.p. 216-265; lt. yel.

benzoic acid, anhydride. See benzoic anhydride.

benzoic acid, o-anilino-. See anthranilic acid, N-phenyl-.

benzoic acid, azodi-. See azobenzoic acid.

benzoic acid, azoxydi-. See azoxybenzoic acid.

benzoic acid, m-benzamido- (m-benzoylaminobenzoic acid). $C_6H_5CONHC_6H_4COOH$; m.w. 241.09; red. pr.f.al.; m.p. 248; s.w.; s.al.

benzoic acid, o-benzamido-. See anthranilic acid, N-benzoyl-.

benzoic acid, p-benzamido- (p-benzoylamino benzoic acid). $C_6H_5CONHC_6H_4COOH$; m.w. 241.09; sm. need. f.al.; m.p. 278; s.w.; s.al.

benzoic acid, o-benzohydryl-. (triphenylmethane o-carboxylic acid). $(C_6H_5)_2CHC_6H_4COOH$; m.w. 288.12; need. f.al.; m.p. 161-2; i.w.; s.al.

benzoic acid, m-benzoyl- (benzophenone-m-carboxylic acid). $C_6H_5COC_6H_4COOH$; m.w. 226.08; need. f.dil.al.; m.p. 161-2; s.w.; s.al.

benzoic acid, o-benzoyl- (benzophenone-o-carboxylic acid). $C_6H_5COC_6H_4COOH$; m.w. 226.08; tricl. need. $(+1H_2O)$ f.h.w.; m.p. $+H_2O$, 93, anh. 217; s.w.; s.al.

benzoic acid, p-benzoyl- (benzophenone-p-carboxylic acid). $C_6H_5COC_6H_4COOH$; m.w. 226.08; monocl. leaf. f.w.; m.p. 194; s.w.; s.al.

benzoic acid, benzoylamino-. See benzoic acid, benzamido-.

benzoic acid, benzoylbutyl- (butylbenzoyl benzoate). $C_6H_5{\cdot}CO{\cdot}C_6H_4{\cdot}COOC_4H_9$; a plasticizer.

benzoic acid, benzoylbutyl, ortho-. $C_6H_5COC_6H_4COOC_4H_9$; colorl. viscous liq.; sp. gr. $1.127^{34.3}$; b.p. 360; i.w.; s.al.; a plasticizer.

benzoic acid, benzoyl ethyl. See ethyl benzoyl benzoate, ortho-.

benzoic acid, benzoyl methyl-. See methyl benzoyl benzoate.

benzoic acid, m-benzyl-. $C_6H_5CH_2C_6H_4COOH$; m.w. 212.09; need. or leaf. dil. al.; m.p. 107-8; s.w.; s.al.

benzoic acid, o-benzyl- (diphenylmethane-o-carboxylic acid). $C_6H_5CH_2C_6H_4COOH$; m.w. 212.09; need. f.dil.al.; m.p. 114; s.w.; s.al.

benzoic acid, p-benzyl-. $C_6H_5CH_2C_6H_4COOH$; m.w. 212.09; need. f.w. or leaf. f.dil.al.; m.p. 157-8; s.w.; s.al.

benzoic acid, benzyl ester (benzyl benzoate; benzyl benzenecarboxylate). $C_6H_5COOCH_2C_6H_5$; m.w. 212.09; col. oily liq., or need. or leaf.; m.p. 21; b.p. 323-4; i.w.; s.al.

benzoic acid, m-bromo-. BrC_6H_4COOH; m.w. 200.96; col. monocl. need.; m.p. 155; b.p. 280; s.w.; s.al.

benzoic acid, o-bromo-. BrC_6H_4COOH; m.w. 200.96; col. monocl. need. f.w.; m.p. 147-50; s.w.; s.al.

benzoic acid, p-bromo-. BrC_6H_4COOH; m.w. 200.96; col. monocl. need. or leaf. f.w.; m.p. 251-3; s.w.; s.al.

benzoic acid, butyl ester (butyl benzoate; butyl benzenecarboxylate). $C_6H_5COOC_4H_9$; m.w. 178.11; thick col. oil; m.p. -22.4; b.p. 250.3; i.w.; s.al.

benzoic acid, p, p′-carbonyldi- (p, p′-benzophenonedicarboxylic acid). $CO(C_6H_4COOH)_2$; m.w. 270.08; gel.; i.w.; s.al.

benzoic acid, o-(carboxymethoxy)-(salicylic-o-acetic acid; salicylacetic acid). $HOOCCH_2OC_6H_4COOH$; m.w. 196.06; need. f.w.; m.p. 190; s.w.; s.al.

benzoic acid, m-chloro-. ClC_6H_4COOH; m.w. 156.50; col. pr.; m.p. 158; s.w.; s.al.

benzoic acid, o-chloro-. ClC_6H_4COOH; m.w. 156.50; col. monocl.; m.p. 142; s.w.; s.al.

benzoic acid, p-chloro-. ClC_6H_4COOH; m.w. 156.50; col. tricl.; m.p. 243; s.w.; s.al.

benzoic acid, p-cyano- (terephthalic mononitrile). CNC_6H_4COOH; m.w. 147.05; leaf. f.w.; m.p. 213-4; s.w.; s.al.

benzoic acid, 2, 3-diamino-. $C_6H_3(NH_2)_2COOH$; m.w. 152.08; lng. need.; m.p. 190-1; s.w.; s.al.

benzoic acid, 2, 4-diamino-. $C_6H_3(NH_2)_2COOH$; m.w. 152.08; cr.; m.p. *ca.* 140; s.w.; s.al.

benzoic acid, 2, 5-diamino-. $C_6H_3(NH_2)_2COOH$; m.w. 152.08; sm.pr.; s.w.; s.al.

benzoic acid, 3, 4-diamino-. $C_6H_3(NH_2)_2COOH$; m.w. 152.08; leaf.; s.w.

benzoic acid, 3, 5-diamino-. $C_6H_3(NH_2)_2COOH$; m.w. 152.08; need. $(+1H_2O)$. f.w.; m.p. $-H_2O$, 110; anh. 228-36; s.w.; s.al.

benzoic acid, di-pamino-, fluosilicate. See di-p-aminobenzoic acid fluosilicate.

benzoic acid, 2, 3-dibromo-. $C_6H_3Br_2COOH$; m.w. 279.86; need. f.w.; m.p. 149-50; s.w.

benzoic acid, 2, 4-dibromo-. $C_6H_3Br_2COOH$; m.w. 279.86; leaf. f.w.; m.p. 172-3; s.w.; s.al.

benzoic acid, 2, 5-dibromo-. $C_6H_3Br_2COOH$; m.w. 279.86; need. f.w. or al.; m.p. 153; s.w.; s.al.

benzoic acid, 2, 6-dibromo-. $C_6H_3Br_2COOH$; m.w. 279.86; need. f.w.; m.p. 146.5; b.p. 209-10 ^{15}; s.w.; s.al.

benzoic acid, 3, 4-dibromo-. $C_6H_3Br_2COOH$; need. f.w.; m.p. 232-3; s.w.; s.al.

benzoic acid, 2, 3-dichloro-. $Cl_2C_6H_3COOH$; m.w. 190.95; need.; m.p. 164; s.w.; s.al.

benzoic acid, 2, 4-dichloro-. $Cl_2C_6H_3COOH$; m.w. 190.95; need. f.w. or bz.; m.p. 164; s.w.; s.al.

benzoic acid, 2, 5-dichloro-. $Cl_2C_6H_3COOH$; m.w. 190.95; col. need. f.w.; m.p. 154.4; b.p. 301; s.w.; s.al.

benzoic acid, 2, 6-dichloro-. $Cl_2C_6H_3COOH$; m.w. 190.95; col. need. f.al.; m.p. 139; i.w.; s.al.

benzoic acid, 3, 4-dichloro-. $Cl_2C_6H_3COOH$; m.w. 190.95; col. need. f.al. or bz.; m.p. 208-9; s.w.; s.al.

benzoic acid, 3, 5-dichloro-. $Cl_2C_6H_3COOH$; m.w. 190.95; need. f.al.; m.p. 182-3; s.al.

benzoic acid, 2, 3-dihydroxy- (o-pyrocatechuic acid; pyrocatechol-o-acid). $(HO)_2C_6H_3COOH$; m.w. 154.05; col. need. f.w.; m.p. anh. 204; s.w.; s.al.

benzoic acid, 2, 4-dihydroxy-. See β-resorcylic acid.

benzoic acid, 2, 5-dihydroxy-. See gentisic acid.

benzoic acid, 2, 6-dihydroxy-. See γ-resorcylic acid.

benzoic acid, 3, 4-dihydroxy-. See protocatechuic acid.

benzoic acid, 3, 5-dihydroxy-. See α-resorcylic acid.

benzoic acid, 3, 4-dimethoxy-. See veratric acid.

benzoic acid, 2, 3-dimethyl-. See hemellitic acid.

benzoic acid, 2, 4-dimethyl-. See 2, 4-xylic acid.

benzoic acid, 2, 5-dimethyl-. See isoxylic acid.

benzoic acid, 2, 6-dimethyl-. See 2, 6-xylic acid.

benzoic acid, 3, 4-dimethyl-. See 3, 4-xylic acid.

benzoic acid, 3, 5-dimethyl-. See mesitylenic acid.

benzoic acid, 2, 4-dinitro-. $(NO_2)_2C_6H_3COOH$; m.w. 212.05; col. rhomb. pr.f.w.; m.p. 182-3; s.w.; s.al.

benzoic acid, 2, 5-dinitro-. $(NO_2)_2C_6H_3COOH$; m.w. 212.05; col. need. or monocl. pr.f.w.; m.p. 177; s.w.; s.al.

benzoic acid, 2, 6-dinitro-. (C_6H_3COOH; m.w. 212.05; col. f.w.; m.p. 202-3; s.w.; s.al.

benzoic acid, 3, 4-dinitro-. (C_6H_3COOH; m.w. 212.05; col. m.p. 163; s.w.; s.al.

benzoic acid, 3, 5-dinitro-. (C_6H_3COOH; m.w. 212.05; yel. mo tab. f.w.; m.p. 204-5; s.w.; s.al.

benzoic acid, m-ethoxy-. C_2H_5O COOH; m.w. 166.08; col. need. m.p. 137; s.w.; s.al.

benzoic acid, o-ethoxy- (salicylic ethyl ether). $C_2H_5OC_6H_4CO$ m.w. 166.08; col. oil.; m.p. 19.3- s.w.

benzoic acid, p-ethoxy-. C_2H_5OC COOH; m.w. 166.08; col. need.; 195; s.w.

benzoic acid, m-ethyl-. C_2H_5C COOH; m.w. 150.08; col. n f.dil.al.; m.p. 47; s.w.; s.al.

benzoic acid, o-ethyl-. C_2H_5C COOH; m.w. 150.08; col. need. f.h m.p. 68; b.p. 259; s.w.; s.al.

benzoic acid, p-ethyl-. C_2H_5C COOH; m.w. 150.08; col. leaf. pr.f.al.; m.p. 113; s.w.; s.al.

benzoic acid, m-ethylamino-. C_2H_5N C_6H_4COOH; m.w. 165.09; pr.; n 101; s.w.; s.al.

benzoic acid, o-ethylamino-. anthranilic acid, N-ethyl-.

benzoic, p-ethylamino-. $C_2H_5NHC_6$ COOH; m.w. 165.09; m.p. 178; s.al

benzoic acid, ethylene ester. See gly dibenzoate.

benzoic acid, ethyl ester (ethyl benzoa ethyl benzenecarboxylate). C_6 $COOC_2H_5$; m.w. 150.08; col. l m.p. -34.6; b.p. 212.6; s.w.; s.al.

benzoic acid, m-fluoro-. FC_6H_4COO m.w. 140.04; leaf. f.w.; m.p. 124; s

benzoic acid, o-fluoro-. FC_6H_4COO m.w. 140.04; need. f.w.; m.p. 1 s.w.; s.al.

benzoic acid, p-fluoro-. FC_6H_4COO m.w. 140.04; monocl. pr.f.w.; m.p. 1 s.w.; s.al.

benzoic acid, m-formyl-. See isophth aldehydic acid.

benzoic acid, o-formyl-. See phthal dehydic acid.

benzoic acid, p-formyl-. See terephth aldehydic acid.

benzoic acid, hexahydro-. See cyc hexanecarboxylic acid.

benzoic acid, hydrazide (benz hydrazide; benzoylhydrazine). C_6H $CONHNH_2$; m.w. 136.08; pl.f.w.; m 112.5; s.w.; s.al.

benzoic acid, hydrazodi-. See hydra benzoic acid.

benzoic acid, m-hydroxy-. HOC_6H COOH; m.w. 138.05; col. rhomb. f or al.; m.p. 201.3; s.w.; s.al.

benzoic acid, o-hydroxy-. See salicy acid.

benzoic acid, p-hydroxy-. HOC_6H COOH; m.w. 138.05; col. mono f.w.; m.p. 213; s.w.; s.al.

benzoic acid, p-(α-hydroxybenzyl)- benzohydrolcarboxylic acid). C_6H $CH(OH)C_6H_4COOH$; m.w. 228.0 need. f.w.; m.p. 164-5; s.w.; s.al.

benzoic acid, 4-hydroxy-3-methoxy-. S vanillic acid.

benzoic acid, p-hydroxy methyl-. S methyl p-hydroxy benzoate.

benzoic acid, p-hydroxy-n-propyl-. H $C_6H_4CO_2{\cdot}CH_2CH_2CH_3$; wh. cry powd.; m.p. 97; s.al., s.w. (ho preservative and antioxidant.

benzoic acid, o-β-hydroxyvinyl-, lacto- See isocoumarin.

benzoic acid, m-iodo-. IC_6H_4COO m.w. 247.96; need. f. acet.; m 185-7; s.w.; s.al.

benzoic acid, o-iodo-. IC_6H_4COO m.w. 247.96; col. need. f.w.; m 162; s.w.; s.al.

benzoic acid, p-iodo-. IC_6H_4COO m.w. 247.96; pl. or leaf.; m.p. 269- s.w.; s.al.

benzoic acid, isoamyl ester (3-methyl butanol benzoate). $C_6H_5COOC_5H$ m.w. 192.13; col. liq.; b.p. 262; i. s.al.

zoic acid, isobutyl ester (isobutyl enzoate; β-methylpropyl benzene arboxylate). $C_6H_5COOCH_2$-$CH(CH_3)_2$; m.w. 178.11; col. liq.; p.gr. 1.002; b.p. 237; i.w.; s.al.; lasticizer; medicinal ingredient.

zoic acid, o-isopropyl-. $(CH_3)_2CH$-C_6H_4COOH; m.w. 164.09; col. pr.f.w.; n.p. 51; s.w.; s.al.

zoic acid, p-isopropyl-. See cumic cid.

zoic acid, isopropyl ester. C_6H_5-$COOCH(CH_3)_2$; m.w. 164.09; col. liq.; o.p. 218.5; i.w.; s.al.

nzoic acid, o-mercapto- (thiosalicylic cid; o-sulfhydryl benzoic acid). HS-C_6H_4COOH; m.w. 154.11; lt. yel. need. f.al.; m.p. 164; s.w.; s.al.

nzoic acid, m-methoxy-. $CH_3OC_6H_4$-$COOH$; m.w. 152.06; col. need. f.w.; m.p. 107-8; s.w.; s.al.

nzoic acid, o-methoxy- (salicylic acid methyl ether). $CH_3OC_6H_4COOH$; m.w. 152.06; monocl. tab. f.w.; m.p. 98; b.p. 200; s.w.; s.al.

nzoic acid, p-methoxy-. See anisic acid.

enzoic acid, methyl-. See toluic acid.

enzoic acid, 3-methyl-1-butanol ester. See benzoic acid, isoamyl ester.

enzoic acid, methylene diester (methylene dibenzoate; methylene benzoate; methane diol dibenzoate). $(C_6H_5$-$COO)_2CH_2$; m.w. 256.09; need.; m.p. 97.8; s.w.; s.al.

enzoic acid, 3, 4-methylene dioxy-. See piperonylic acid.

enzoic acid, methylene ester. See benzoic acid, methylene diester.

enzoic acid, methyl ester (methyl benzoate; "niobe oil). $C_6H_5COOCH_3$; m.w. 136.06; col. liq.; m.p. −12.5; b.p. 199.6; s.w.; s.al.

enzoic acid, m-nitro-. $NO_2C_6H_4COOH$; m.w. 167.05; monocl. leaf. f.w.; m.p. 141.4; s.w.; s.al.

enzoic acid, o-nitro-. $NO_2C_6H_4COOH$; m.w. 167.05; tricl. need. f.w.; m.p. 147.5; s.w.; s.al.

enzoic acid, p-nitro-. $NO_2C_6H_4COOH$; m.w. 167.05; monocl. leaf. f.w.; m.p. 242.4; s.w.; s.al.

enzoic acid, m-nitrobenzyl ester. See benzyl alcohol, m-nitro-, benzoate.

enzoic acid, m-nitro-, ethyl ester. NO_2-$C_6H_4COOC_2H_5$; m.w. 195.08; monocl. pr.; m.p. 47; b.p. 298; i.w.; s.al.

enzoic acid, o-nitro-, ethyl ester. NO_2-$C_6H_4COOC_2H_5$; m.w. 195.08; col. tricl.; m.p. 30; b.p. 148-50 [10]; i.w.; s.al.

benzoic acid, p-nitro-, ethyl ester. NO_2-$C_6H_4COOC_2H_5$; m.w. 195.08; col. tricl. leaf. al.; m.p. 57; i.w.; s.al.

benzoic acid, m-nitro, methyl ester. $NO_2C_6H_4COOCH_3$; m.w. 181.06; col. need.; m.p. 78.5; b.p. 279; i.w.; s.al.

benzoic acid, o-nitro-, methyl ester. $NO_2C_6H_4COOCH_3$; m.w. 181.06; yel. oil.; m.p. −8; b.p. 275; i.w.; s.al.

benzoic acid, p-nitro, methyl ester. NO_2-$C_6H_4COOCH_3$; m.w. 181.06; yel. monocl. leaf.; m.p. 96; i.w.; s.al.

benzoic acid, m-nitroso-. NOC_6H_4-$COOH$; m.w. 151.05; col. cr.; s.al.

benzoic acid, o-nitroso-. NOC_6H_4-$COOH$; m.w. 151.05; col. f.al.; s.al.

benzoic acid, p-nitroso-. NOC_6H_4-$COOH$; m.w. 151.05; yel. powd.; s.al.

benzoic acid, pentamethyl-. $(CH_3)_5C_6$-$COOH$; m.w. 192.12; need. f.w.; m.p. 210.5; s.w.; s.al.

benzoic acid, o-phenoxy- (salicylic acid phenyl ether). $C_6H_5OC_6H_4COOH$; m.w. 214.08; rhomb. leaf. f.dil.al.; m.p. 114.5; s.w.; s.al.

benzoic acid, m-phenyl- (m-biphenyl carboxylic acid). $C_6H_5C_6H_4COOH$; m.w. 198.08; col. leaf. f.al.; m.p. 160-2; i.w.; s.al.

benzoic acid, o-phenyl- (o-biphenylcarboxylic acid). $C_6H_5C_6H_4COOH$; m.w. 198.08; col. monocl. need. f.al.; m.p. 114; b.p. 343-4; s.w.; s.al.

benzoic acid, phenyl ester (phenyl benzoate). $C_6H_5COOC_6H_5$; m.p. 198.08; col. monocl.; m.p. 70; b.p. 314; s.w.; s.al.

benzoic acid, phenylhydrazide (1-benzoyl-2-phenylhydrazine). C_6H_5-$CONHNHC_6H_5$; m.w. 212.11; col. pl. f.al.; m.p. 168; s.w.; s.al.

benzoic acid, p-phosphono- (p-benzophosphinic acid). $(HO)_2POC_6H_4$-$COOH$; m.w. 202.07; need. f.w.; m.p. >300; s.w.; s.al.

benzoic acid, o-propyl-. $C_3H_7C_6H_4$-$COOH$; m.w. 164.09; leaf. f.al.; m.p. 58; b.p. 273; s.w.; s.al.

benzoic acid, p-propyl-. $C_3H_7C_6H_4$-$COOH$; m.w. 164.09; col. leaf. f.w.; m.p. 141; s.w.; s.al.

benzoic acid, propyl ester (n-propyl benzoate). $C_6H_5COOC_3H_7$; m.w. 164.09; col. liq.; m.p. −51.6; b.p. 231.2; s.w.; s.al.

benzoic acid, silico-. See benzenesiliconic acid.

benzoic acid, o-sulfamido-. See benzoic acid, o-sulfamyl-.

benzoic acid, m-sulfamyl-. NH_2O_2S-C_6H_4COOH; m.w. 201.12; need. or pl. f.w.; m.p. 238; s.w.; s.al.

benzoic acid, o-sulfamyl- (o-sulfamidobenzoic acid). $NH_2O_2SC_6H_4COOH$; m.w. 201.12; rhomb. f.al.; m.p. 165-7; s.w.; s.al.

benzoic acid, p-sulfamyl-. NH_2O_2S-C_6H_4COOH; m.w. 201.12; need. or pr.f.w.; s.w.; s.al.

benzoic acid, o-sulfhydryl-. See benzoic acid, o-mercapto-.

benzoic acid, m-sulfo-. $HO_3SC_6H_4$-$COOH \cdot 2H_2O$; m.w. 238.14; deliq. cr.; m.p. 98, anh. 141; s.w.; s.al.

benzoic acid, o-sulfo-. $HO_3SC_6H_4$-$COOH \cdot 3H_2O$; m.w. 256.15; rhomb. need. f.w.; m.p. 68-9, $-3H_2O$ 105, anh. 141; s.w.; s.al.

benzoic acid, p-sulfo-. $HO_3SC_6H_4$-$COOH \cdot 2H_2O$; m.w. 256.15; need. f.w.; m.p. 94, anh. 260; s.w.; s.al.

benzoic acid, o-sulfo-, imide. See saccharin.

benzoic acid, 2, 3, 4, 5-tetrahydro-. See 1-cyclohexene-1-carboxylic acid.

benzoic acid, 2, 3, 4, 5-tetrahydroxy-. $(HO)_4C_6HCOOH$; m.w. 186.05; cr.; m.p. 148; s.w.

benzoic acid, thio- (benzenecarbothioic acid). C_6H_5COSH or C_6H_5CSOH; m.w. 138.11; yel. oil or cr.; m.p. 24; i.w.; s.al.

benzoic acid, p-(p-toluyl)-. $CH_3C_6H_4$-COC_6H_4COOH; m.w. 240.09; need. f. acet.; m.p. 130; s.w.; s.al.

benzoic acid, 2, 3, 5-triamino-. $(NH_2)_3$-C_6H_2COOH; m.w. 167.09; cr.f.w.; s.w.; s.al.

benzoic acid, 3, 4, 5-triamino-. $(NH_2)_3$-C_6H_2COOH; m.w. 167.09; need. f.w.; m.p. $-H_2O$, >100; s.w.; i.al.

benzoic acid, 2, 3, 4-trichloro-. $Cl_3C_6H_2COOH$; m.w. 225.39; need. f.al.; m.p. 186-7; s.w.; s.al.

benzoic acid, 2, 4, 5-trichloro-. $Cl_3C_6H_2$-$COOH$; m.w. 225.39; sm. need. f.w.; m.p. 163; s.w.; s.al.

benzoic acid, 3, 4, 5-trichloro-. $Cl_3C_6H_2$-$COOH$; m.w. 225.39; need. f.al.; m.p. 203; s.w.; s.al.

benzoic acid, 2, 3, 4-trihydroxy- (4-pyrogallolcarboxylic acid). $(HO)_3$-C_6H_2COOH; m.w. 170.05; need. f.w.; s.w.; s.al.

benzoic acid, 2, 4, 5-trihydroxy- (4-hydroxygentisic acid). $(HO)_3C_6H_2$-$COOH$; m.w. 170.05; need. f.w.; m.p. 217-8; s.w.; s.al.

benzoic acid, 2, 4, 6-trihydroxy- (phloroglucinolcarboxylic acid). $(HO)_3C_6H_2$-$COOH$; m.w. 170.05; cr.f.w.; s.w.; s.al.

benzoic acid, 3, 4, 5-trihydroxy-. See gallic acid.

benzoic acid, 2, 3, 4-trimethoxy-. $(CH_3O)_3C_6H_2COOH$; m.w. 212.09; cr.f.et.; m.p. 97-9; s.w.; s.al.

benzoic acid, 2, 4, 5-trimethoxy-. See asaronic acid.

benzoic acid, 3, 4, 5-trimethoxy- (gallic acid trimethyl ether). $(CH_3O)_3C_6H_2$-$COOH$; m.w. 212.09; monocl. need. f.w.; m.p. 168; b.p. 225-7 [10]; s.w.; s.al.

benzoic acid, 2, 3, 4-trimethyl-. See prehnitylic acid).

benzoic acid, 2, 3, 5-trimethyl-. See γ-isodurylic acid.

benzoic acid, 2, 3, 6-trimethyl-. $(CH_3)_3$-C_6H_2COOH; m.w. 164.09; need. f.w.; m.p. 84; s.w.; s.al.

benzoic acid, 2, 4, 5-trimethyl-. See durylic acid.

benzoic acid, 2, 4, 6-trimethyl-. See β-isodurylic acid.

benzoic acid, 3, 4, 5-trimethyl-. See α-isodurylic acid.

benzoic acid, 2, 4, 6-trinitro- (sym-trinitrobenzoic acid). $(NO_2)_3C_6H_2COOH$; m.w. 243.04; yel. rhomb. need. f.w.; m.p. 228.7; s.w.; s.al.

benzoic amide. See benzamide.

benzoic anhydride (benzoic acid anhydride). $(C_6H_5CO_2)O$; m.w. 226.08; col. rhomb. pr.; m.p. 42; b.p. 360; i.w.; s.al.

benzoic ether. See benzoic acid, ethyl ester.

benzoic sulfinide. See saccharin.

benzoin (benzoylphenylcarbinol; α-hydroxy α-phenylacetophenone). C_6H_5-$CHOHCOC_6H_5$; m.w. 212.09; col. hex. pr.f.al.; m.p. 137; b.p. 344; s.w.; s.al.

benzoin, ethyl ether (α-ethoxy- α-phenylacetophenone; 2-ethoxy-1, 2-diphenyl-1-ethanone). $C_6H_5CH(OC_2H_5)$-COC_6H_5; m.w. 240.12; need. f. lgr.; m.p. 62; b.p. 184-6; s.al.

benzoin, gum. See gum benzoin.

benzoin imide. See amaron.

benzoin, l-oxime. $C_6H_5CH(OH)$-$C(:NOH)C_6H_5$; m.w. 227.11; wh. amor. powd. or pr.f.bz.; m.p. 163-4; i.w.; s.al.

benzol, benzole. See benzene.

benzol chloride. $C_6H_5CHCl_2$; colorl. to light yel. liq.; sp.gr. 1.290-1.295; used in mfr. benzaldehyde, etc.

benzol, crude. A crude product extracted from coal gas, consisting essentially of benzene and its lower homologs; sp.gr. at least .820 at 15.5/15.5.; unsaturated hydrocarbons, sulfur compounds, paraffins, naphthalene, phenols and pyridine bases may be present.

benzol fore-runnings. The first fraction distilled from crude or refined benzol or from light oil, containing a high proportion of constituents boiling below 75° C.; usually rich in carbon disulfide and unsaturated hydrocarbons.

benzoline. The more volatile portions of benzine. The term is often used as synonomous with benzine.

benzonitrile (benzenecarbonitrile; phenyl cyanide). C_6H_5CN; m.w. 103.05; col. liq.; m.p. −13; b.p. 190.7; s.w.; s.al.

benzonitrile, m-amino- (m-aminophenyl cyanide). $NH_2C_6H_4CN$; m.w. 118.06; need.; m.p. 53-4; b.p. 288-90; s.w.; s.al.

benzonitrile, o-amino-. See anthranilonitrile.

benzonitrile, p-amino- (p-aminophenyl cyanide). $NH_2C_6H_4CN$; m.w. 118.06; col. monocl. pr.; m.p. 86; s.w.; s.al.

benzonitrile, p-bromo- (p-bromophenyl cyanide). BrC_6H_4CN; m.w. 181.96; need. f.w.; m.p. 113; b.p. 235-7; s.w.; s.al.

benzonitrile, p-chloro- (4-chlorobenzenecarbonitrile; p-chlorophenyl cyanide). ClC_6H_4CN; m.w. 137.50; need. f.al.; m.p. 92; b.p. 223; s.w.; s.al.

benzonitrile, methyl-. See tolunitrile.

benzonitrile, m-nitro-. $NO_2C_6H_4CN$; m.w. 148.05; need. f.w.; m.p. 118; s.w.; s.al.

benzonitrile, o-nitro- (2-nitrobenzenecarbonitrile; o-nitrophenyl cyanide). $NO_2C_6H_4CN$; m.w. 148.05; silky need. f.w.; m.p. 109; s.w.; s.al.

benzonitrile, p-nitro-. $NO_2C_6H_4CN$; m.w. 148.05; yel. leaf. f.al.; m.p. 147; s.w.; s.al.

benzo[a]phenanthrene. See chrysene.

benzo[def]phenanthrene. See pyrene.

benzo[l]phenanthrene. See triphenylene.

benzo[a]phenazine (α-benzophenazine; α β-naphthophenazine). $C_{10}H_6:N_2$-C_6H_4; m.w. 230.09; yel. need. f.bz.; m.p. 142.5; b.p. >360; i.w.; s.al.

benzo[b] phenazine, 5, 8-dihydro-8-imino-5-phenyl-. See rosinduline.

benzophenone (phenyl ketone; diphenyl ketone; benzoylbenzene; α-oxodiphenylmethane). $(C_6H_5)_2CO$; m.w. 182.08; α (stab.) col. rhomb. pr., β col. monocl. pr.; m.p. α 49, β 26, γ 45-8, δ-51; b.p. 306; i.w.; s.al.

benzophenone, 2-amino- (o-aminophenyl phenyl ketone; o-benzoylaniline). $C_6H_5COC_6H_4NH_2$; m.w. 197.09; pa. yel. leaf.; m.p. 108; s.al.

benzophenone, 3-amino- (m-aminophenyl phenyl ketone; m-benzoylaniline). $C_6H_5COC_6H_4NH_2$; m.w. 197.09; yel. need.; m.p. 86; s.w.; s.al.

benzophenone, 4-amino- (p-aminophenyl phenyl ketone; p-benzoylaniline). $C_6H_5COC_6H_4NH_2$; m.w. 197.09; leaf. f.dil.al.; m.p. 124; s.w.; s.al.

benzophenone, 4, 4'-bisdimethylamino- (Michler's ketone; tetramethyl-4, 4'-diaminobenzophenone). $CO[C_6H_4$-$N(CH_3)_2]_2$; m.w. 268.17; glit. leaf. f.al.; m.p. 174; s.w.; s.al.

benzophenone carboxylic acid. See benzoic acid, benzoyl-.

benzophenone, 2, 2'-diamino- (bis-o-aminophenyl ketone). $NH_2C_6H_4CO$-$C_6H_4NH_2$; m.w. 212.11; pa. yel. leaf. f.dil.al.; m.p. 132-3; i.w.; s.al.

benzophenone, 3, 3'-diamino- (bis-m-aminophenyl ketone). $NH_2C_6H_4CO$-$C_6H_4NH_2$; m.w. 212.11; yel. need. f.al.; m.p. 173-4; b.p. 285 [11]; s.w.; s.al.

benzophenone, 4, 4'-diamino- (bis-p-aminophenyl ketone). $NH_2C_6H_4CO$-$C_6H_4NH_2$; m.w. 212.11; hex. or rhomb. need. f.dil.al.; m.p. 244; s.w.; s.al.

benzophenone, 4, 4'-diamino-tetramethyl-. See benzophenone, 4, 4'-bisdimethylamino-.

p, p'-benzophenonedicarboxylic acid. See benzoic acid, p, p'-carbonyldi-.

2, 3-benzophenonedicarboxylic acid. See phthalic acid, 3-benzoyl-.

2, 5-benzophenonedicarboxylic acid. See terephthalic acid, benzoyl-.

3, 4-benzophenonedicarboxylic acid. See phthalic acid, 4-benzoyl-.

benzophenone, 2, 2'-dihydroxy- (bis-o-hydroxyphenyl ketone). HOC_6H_4CO-C_6H_4OH; m.w. 214.08; leaf. or pr.f.lgr. m.p. 59-60; b.p. 340; i.w.; s.al.

benzophenone, 2, 3'-dihydroxy- (m-hydroxyphenyl o-hydroxyphenyl ketone). $HOC_6H_4COC_6H_4OH$; m.w. 214.08; need. f.w.; m.p. 126; s.al.

benzophenone, 2, 4-dihydroxy- (4-benzoylresorcinol; 4-benzoresorcin). C_6H_5-$COC_6H_3(OH)_2$; m.w. 214.08; m.p. 141; i.w.; s.al.

benzophenone, 2, 4'-dihydroxy- (o-hydroxyphenyl p-hydroxyphenyl ketone; p-salicylylphenol). HOC_6H_4-COC_6H_4OH; m.w. 214.08; yel. pyram. f. bz. or pl. f.h.w.; m.p. 150-1; s.w.; s.al.

benzophenone, 2, 5-dihydroxy- (2, 5-dihydroxyphenyl phenyl ketone). $(HO)_2C_6H_3COC_6H_5$; m.w. 214.08; yel. need. f.dil.al.; m.p. 125; s.w.; s.al.

benzophenone, 3, 3'-dihydroxy- (bis-m-hydroxyphenyl ketone). HOC_6H_4-COC_6H_4OH; m.w. 214.08; sm. need. f.w.; m.p. 170; s.w.; s.al.

benzophenone, 3, 4'-dihydroxy- (m-hydroxyphenyl p-hydroxyphenyl ketone). $HOC_6H_4COC_6H_4OH$; m.w. 214.08; need. f.w.; m.p. 206; s.w.; s.al.

benzophenone, 4, 4'-dihydroxy- (bis-p-hydroxyphenyl ketone). HOC_6H_4CO-C_6H_4OH; m.w. 214.08; yel. need. f. lgr.; m.p. 210; s.w.; s.al.

benzophenone, 2, 4-dihydroxy-6-methoxy-. See isocotoin.

benzophenone, 2, 6-dihydroxy-4-methoxy-. See cotoin.

benzophenone, 4, 4'-dimethyl- (di-p-

tolyl ketone). $CH_3C_6H_4COC_6H_4CH_3$; m.w. 210.11; rhomb. f.al.; m.p. 95; b.p. 333-4 [725]; i.w.; s.al.

benzophenone, p-hydroxy-. $HOC_6H_4COC_6H_5$; m.w. 198.08; rhomb. leaf. f.dil.al.; m.p. 134; s.w.; s.al.

benzophenone, m-nitro-. $NO_2C_6H_4COC_6H_5$; m.w. 227.08; col. need. f.al.; m.p. 94-5; b.p. 234 [18]; s.al.

benzophenone, o-nitro- (o-nitrophenyl phenyl ketone). $NO_2C_6H_4COC_6H_5$; m.w. 227.08; col. monocl. f.al.; m.p. 105; s.al.

benzophenone, p-nitro-. $NO_2C_6H_4COC_6H_5$; m.w. 227.08; col. leaf. f.al.; m.p. 138; s.w.; s.al.

benzophenone, oxime. $(C_6H_5)_2C{:}NOH$; m.w. 197.09; need.; m.p. 144; s.w.; s.al.

benzophenone, 2, 4, 6, 3', 4'-pentahydroxy-. See maclurin.

benzophenone, phenylhydrazone. $(C_6H_5)_2C{:}NNHC_6H_5$; m.w. 272.14; need.; m.p. 137.

benzophenone, 2, 2', 6-trihydroxy- (2-salicylylresorcinol). $(HO)_2C_6H_3COC_6H_4OH$; m.w. 230.08; yel. leaf. f.al.; m.p. 133; s.w.; s.al.

benzophenone, 2, 3, 4-trihydroxy- (4-benzoylpyrogallol; alizarin yellow A). $C_6H_5COC_6H_2(OH)_3$; m.w. 230.08; yel. need. f.dil.al.; m.p. 140; s.w.; s.al.

p-benzophosphinic acid. See benzoic acid, p-phosphono-.

benzopinacol (1, 1, 2, 2-tetraphenyl-1, 2-ethanediol; tetraphenylethylene glycol; benz(o)pinacone). $(C_6H_5)_2COHCOH(C_6H_5)_2$; m.w. 366.17; pr.; s.al.

β-benzopinacolin (α-triphenylacetophenone; benzoyltriphenyl methane; phenyl trityl ketone). $(C_6H_5)_3CCOC_6H_5$; m.w. 348.16; need.; m.p. 182.5; i.w.; s.al.

benzopinacone. See benzopinacol.

benzopyrazine. See quinoxaline.

benzo[b]pyridine. See quinoline.

benzo[c]pyridine. See isoquinoline.

benzo[a]pyrimidine. See quinazoline.

1, 2-benzopyrone. See coumarin.

1, 4-benzopyrone, γ-benzopyrone. See chromone.

2, 1-benzopyrone. See isocoumarin.

benzol[b] pyrole. See indole.

benzoquinhydrone. See quinhydrone.

benzo[f] quinoline (5, 6-benzoquinoline; β-naphthoquinoline). $C_{13}H_9N$; m.w. 179.08; sm. leaf. f.h.w.; m.p. 93; b.p. 351; s.w.; s.al.

benzo[f] quinoline, 3-methyl- (3-methyl-5, 6-benzoquinoline; β-naphthoquinaldine). $C_{13}H_8NCH_3$; m.w. 193.09; need. f.dil.al.; m.p. 82; b.p. >300; s.w.; s.al.

benzo[h] quinoline (7, 8-benzoquinoline; α-naphthoquinoline). $C_{13}H_9N$; m.w. 179.08; monocl. f.et.; m.p. 52; b.p. 351; s.w.; s.al.

benzo[h] quinoline, 2-methyl- (2-methyl-7, 8-benzoquinoline; α-naphthoquinaldine). $C_{13}H_8NCH_3$; m.w. 193.09; liq.; b.p. >300; i.w.; s.al.

p-benzoquinone. See quinone.

4-benzoresorcin. See benzophenone, 2, 4-dihydroxy-.

benzothiazole, 2,-(2, 4-dinitrophenylthio)- (2-benzothiazyl 2, 4-dinitrophenyl sulfide). $C_6H_4SC[SC_6H_3(NO_2)_2]{:}N$

m.w. 333.20; yel. cr.; m.p. 160-2; i.w.; s.al.

benzothiazole, 2, 2'-dithiobis-(2, 2'-dibenzothiazyl disulfide). $C_{14}H_8N_2S_4$; m.w. 332.32; lt. yel. cr.; m.p. 180; i.w.; s.al.

benzothiazole, mercapto-. See benzothiazolethiol.

benzothiazole, 2-methyl- (μ-methylbenzothiazole; ethenylaminothiophenol). $SC(CH_3){:}NC_6H_4$; m.w. 149.12; liq.; b.p. 238; i.w.; s.al.

benzothiazole, 2-phenyl- (benzenylaminothiophenol). $C_6H_4SC(C_6H_5){:}N$

m.w. 211.14; need. f.al.; m.p. 115; b.p. 360; i.w.; s.al.

2-benzothiazolethiol (2-mercaptobenzothiazole; o-thiocarbamidothiophenol). $C_6H_4SC(SH){:}N$; m.w. 167.17; lt. yel. cr.; m.p. 179.5; i.w.; s.al.

2-benzothiazolethiol, benzoate. $C_{14}H_9NOS_2$; m.w. 271.20; yel. cr.; m.p. 132; i.w.; s.al.

2-benzothiazolethiol, mercaptide with α, β-diphenylguanidine). $C_{30}H_{18}N_4S_2$; m.w. 378.29; yel. cr.; m.p. 173; i.w.; s.al.

2-benzothiazolethiol, 6-nitro-, diethyl thiolthionocarbamic ester. $C_{12}H_{13}N_3O_2S_3$; m.w. 327.31; fine yel. cr.; m.p. 122; i.w.; s.al.

benzothiofuran. See thionaphthene.

benzothiophene. See thionaphthene.

m-benzotoluide (N-benzoyl-m-toluidine; m-benzotoludide). $C_6H_5CONHC_6H_4CH_3$; m.w. 211.11; monocl. pr. f.dil. al.; m.p. 125; s.al.

o-benzotoluide (N-benzoyl-o-toluidine). $C_6H_5CONHC_6H_4CH_3$; m.w. 211.11; rhomb. need.; m.p. 146; s.w.; s.al.

p-benzotoluide (N-benzoyl-p-toluidine). $C_6H_5CONHC_6H_4CH_3$; m.w. 211.11; rhomb. need. f.al.; m.p. 158; b.p. 232; i.w.; s.al.

m-benzotoluidide. See m-benzotoluide.

1, 2, 3-benzotriazole (aziminobenzene; benzene azimide). $C_6H_4NHN{:}N$; m.w. 119.06; need. f.bz.; m.p. 100; b.p. 73.5; i.w.; s.al.

benzotrichloride. See toluene, α-trichloro-.

benzotrifluoride. See toluene, α-trifluoro-.

benzoxazole, 2-methyl- (μ-methylbenzoxazole; ethenylaminophenol). $OC(CH_3){:}NC_6H_4$; m.w. 133.06; liq.; b.p. 201.; i.w.; s.al.

2(3)-benzoxazolone (o-hydroxycarbanilic acid lactone). C_6H_4OCONH or $C_6H_4OC(OH){:}N$; m.w. 133.05; col. need. f.h.dil. HCl; m.p. 141-2; s.w.; s.al.

2, 3, 1-benzoxaz-1-one (benzaldoximecarboxylic anhydride). $C_6H_4COON{:}CH$; m.w. 147.05; cr.f.bz.

benzoyl acetic ester. See acetic acid, benzoyl, ethyl ester.

benzoyl aconine. See benzaconine.

N-benzoyl aniline. See benzanilide.

benzoyl azide (benzazide). $C_6H_5CON_3$; m.w. 147.06; col. pl.f. acet.; m.p. 32; i.w.; s.al.

benzoyl bromide (benzenecarbonyl bromide). C_6H_5COBr; m.w. 184.96; col. fum. liq.; m.p. 0; b.p. 218-19.

benzoyl chloride (benzenecarbonyl chloride). C_6H_5COCl; m.w. 140.50; col. fum. liq.; m.p. −1; b.p. 197.

benzoyl chloride, p-bromo-. BrC_6H_4COCl; m.w. 219.40; col. need.; m.p. 42; s.al.

benzoyl chloride, 3, 5-dinitro-. $(NO_2)_2C_6H_3COCl$; m.w. 230.50; yel. need. f.bz.; m.p. 68-9; b.p. 196 [13].

benzoyl chloride, p-methoxy-. See anisoyl chloride.

benzoyl chloride, m-nitro-. $NO_2C_6H_4COCl$; m.w. 185.50; yel. pr.; m.p. 34; b.p. 278.

benzoyl chloride, p-nitro-. $NO_2C_6H_4COCl$; m.w. 185.50; yel. need. f. lgr.; m.p. 72; b.p. 154 [15]

benzoyl cyanide (α-keto-α-tolunitrile; 2-oxo-2-phenylethanenitrile). C_6H_5COCN; m.w. 131.05; col. tab.; m.p. 32-3; b.p. 206-8; i.w.; s.al.

benzoyl dimethyl amino ethylpropanol hydrochloride. See stovaine.

benzoyl disulfide (dibenzoyl disulfide). $(C_6H_5CO)_2S_2$; m.w. 274.20; pr. f.h. al., et. or CS_2; m.p. 133; i.w.; s.al.

benzoyl fluoride (benzenecarbonyl fluoride). C_6H_5COF; m.w. 124.04; fum. liq.; b.p. 154-5; s.al.

benzoyl hydroperoxide. See perbenzoic acid.

benzoyl iodide (benzenecarbonyl iodide). C_6H_5COI; m.w. 231.96; need. or leaf.; m.p. 3; b.p. 135 [15]; s.al.

benzoyl peroxide (dibenzoyl peroxide). $(C_6H_5CO)_2O_2$; m.w. 242.08; col. rhomb. f.et.; m.p. 103.5; s.w.; s.al.

benzoylphenyl carbinol. See benzoin.

benzpinacone. See benzopinacol.

benzyl acetate. See acetic acid, benzyl ester.

benzyl alcohol (phenylcarbinol; α-hydroxytoluene). $C_6H_5CH_2OH$; m.w. 108.06; col. liq.; m.p. −15.3; b.p. 205.2; s.w.; s.al.

benzyl alcohol, o-chloro-. $ClC_6H_4CH_2OH$; m.w. 142.51; need. or leaf. f.dil.al.; m.p. 72; b.p. 230; s.w.; s.al.

benzyl alcohol, 3, 4-dihydroxy-α-(methylamino methyl)-. See adrenaline.

benzoic acid, p-phenyl- (p-biphenylcarboxylic acid). $C_6H_5C_6H_4COOH$; m.w. 198.08; col. need. f.al. or bz.; m.p. 219; s.w.; s.al.

benzyl alcohol, α, α-dimethyl-. See 2-propanol, 2-phenyl-.

benzyl alcohol, esters. See "benzyl ester" under the corresponding acids.

benzyl alcohol, m-hydroxy- (α, 3-toluenediol). $HOC_6H_4CH_2OH$; m.w. 124.06; need. f.bz.; m.p. 67; s.w.; s.al.

benzyl alcohol, o-hydroxy-. See saligenin.

benzyl alcohol, p-hydroxy- (α, 4-toluenediol). $HOC_6H_4CH_2OH$; m.w. 124.06; col. need. f.w.; m.p. 124; b.p. 252; s.w.; s.al.

benzyl alcohol, 4-hydroxy-3-methoxy-. See vanillyl alcohol.

benzyl alcohol, p-isopropyl-. See cumic alcohol.

benzyl alcohol, o-methoxy- (saligenin-2-methyl ether). $CH_3OC_6H_4CH_2OH$; m.w. 138.08; liq.; b.p. 248-50; s.w.; s.al.

benzyl alcohol, p-methoxy-. See anisyl alcohol.

benzyl alcohol, o-, m-, or p-methyl-. See carbinol, tolyl-.

benzyl alcohol, α-methyl- (methylphenylcarbinol; 1-phenylethanol). $C_6H_5CH(CH_3)OH$; m.w. 122.08; col. liq.; b.p. 205; i.w.; s.al.

benzyl alcohol, 3, 4-methylenedioxy-. See piperonyl alcohol.

benzyl alcohol, m-nitro-. $NO_2C_6H_4CH_2OH$; m.w. 153.06; rhomb.; m.p. 27; b.p. 180 [8]; s.w.; s.al.

benzyl alcohol, o-nitro-. $NO_2C_6H_4CH_2OH$; m.w. 153.06; need. f.w.; m.p. 74; b.p. 168 [30]; s.w.; s.al.

benzyl alcohol, p-nitro-. $NO_2C_6H_4CH_2OH$; m.w. 153.06; need. f.w.; m.p. 93; b.p. 185 [13]; s.w.; s.al.

benzyl alcohol, m-nitro-, benzoate (m-nitrobenzyl benzoate). $C_6H_5COOCH_2C_6H_4NO_2$; m.w. 257.09; m.p. 69.0-.5; i.w.; s.al.

benzyl alcohol, thio-. See α-toluene thiol.

benzyl amide, aceto-. See acetamide, N-benzyl-.

benzylamine (α-aminotoluene). $C_6H_5CH_2NH_2$; m.w. 107.08; col. liq.; b.p. 185; s.w.; s.al.

benzylamine, N-acetyl-. See acetamide, N-benzyl-.

benzylamine, N, N-diphenyl-. See diphenylamine, N-benzyl-.

benzylamine, α-methyl- (α-phenylethylamine; 1-amino-1-phenylethane). $C_6H_5CH(CH_3)NH_2$; m.w. 121.09; arom. oil; b.p. 187.4; s.w.; s.al.

benzylamine, N-methyl-N-phenyl- (N-benzyl-N-methylaniline). $C_6H_5CH_2N(CH_3)C_6H_5$; m.w. 197.13; liq.; m.p. 9.2; b.p. 306; i.w.; s.al.

benzylamine, N-nitroso-N-phenyl- (N-phenylbenzylnitrosamine). $C_6H_5CH_2N(NO)C_6H_5$; m.w. 212.11; yel. need. f.al.; m.p. 57-8; i.w.; s.al.

benzylamine, N-phenyl- (N-benzylaniline). $C_6H_5CH_2NHC_6H_5$; m.w. 183.11; col. monocl. pr.f.al.; m.p. 37-8; b.p. 306-7; i.w.; s.al.

benzylaniline (benzylphenylamine). $C_6H_5CH_2NH(C_6H_5)$. m.w. 183.11; colorl. to wh. cryst.; m.p. 37; b.p. 3 s.al.; i.w.; used in organic synthesis

benzyl azide. See toluene, α-trianzo-.

benzyl benzoate. See benzoic ac benzyl ester.

benzyl bromide (α-bromotoluene). $C_6H_5CH_2Br$; m.w. 170.97; col. pois. li m.p. −4.0; b.p. 198; i.w.; s.al.

benzyl cellulose. A base for lacqu and enamels.

benzyl chloride (α-chlorotoluene). $C_6H_5CH_2Cl$; m.w. 126.51; col. liq.; m. −43; b.p. 179; s.al.

benzyl chloride (α, α-dichlorotolue benzylidene chloride). $C_6H_5CHCl_2$; m.w. 160.96; col. oily liq.; m.p. −1 b.p. 207; i.w.; s.al.

benzyl chloride, o-bromo- (o-bromochlorotoluene). $BrC_6H_4CH_2Cl$; m. 205.42; b.p. 124-6 [20]; i.w.; s.al.

benzyl chloride, p-bromo- (p-bromochlorotoluene). $BrC_6H_4CH_2Cl$need f.al. or pet. eth.; m.p. 41; b.p. 23 i.w.; s.al.

benzyl chloride, p-chloro- (α, 4-dichlo toluene). $ClC_6H_4CH_2Cl$; m.w. 160.9 need.; m.p. 29; b.p. 222; i.w.; s.al.

benzyl cyanide. See α-tolunitrile.

benzyl disulfide (dibenzyl disulfide; [benzyldithio] toluene). $(C_6H_5CH_2)_2S_2$; m.w. 246.23; leaf. f.al.; m. (1) 71-2, (2) 69-70; s.w.; s.al.

benzyl ether (dibenzyl ether). $(C_6H_5CH_2)_2O$; m.w. 198.11; col. oil.; m. 4-5; b.p. 295-8; i.w.; s.al.

benzyl hydrosulfide. See α-toluenethi

α-(or o-) benzylhydroxylamine. S benzyloxamine.

benzylidene. See benzal.

benzylidene acetone. See acetone, be zal-.

benzylideneazine. See benzaldehyd azine.

benzylidene bromide. See benzal br mide.

benzylidene chloride. See benzyl chl ride.

benzylidene diacetate. See benzal acetate.

benzylidene hydrazine. See benzald hyde, hydrazone.

benzylidene phenyl hydrazine. S benzaldehyde, phenyl hydrazone.

benzyl iodide (α-iodotoluene). $C_6H_5CH_2I$; m.w. 217.97; col. cr.; m.p. 2 b.p. 93 [10]; i.w.; s.al.

benzyl mercaptan. See α-toluenethi

benzyl mustard oil. See isothiocyan acid, benzyl ester.

benzylnitrosamine, N-phenyl-. See be sylamine, N-nitroso-N-phenyl-.

benzyloxyamine (α[or o]-benzylhydroxy amine). $C_6H_5CH_2NHOH$; m. 123.08; oil.; b.p. 118-9 [20]; s.w.

benzyl phenylamine. See benzyl anili

benzyl sulfide (dibenzyl sulfide). $(C_6H_5CH_2)_2S$; m.w. 214.17; col. rhom pl.f.et. or chl.; m.p. 49; i.w.; s.al.

benzyl sulfone (dibenzyl sulfone $(C_6H_5CH_2)_2SO_2$; m.w. 246.17; nee f.al. +bz.; m.p. 151; s.w.; s.al.

benzyl sulfoxide (dibenzyl sulfoxide $(C_6H_5CH_2)_2SO$; m.w. 230.17; lea f.al. or w.; m.p. 134; s.w.; s.al.

berberamine. $C_{18}H_{19}NO_3{\cdot}2H_2O$; m. 333.19; leaf. f.al.; m.p. anh. 200; s.

berberine. $C_{20}H_{17}NO_4{\cdot}6H_2O$; m. 443.23; yel. anh. need. f.et.; (+$6H_2O$) f.w.; m.p. anh. 145; s.w s.al.

berberine, compd. with chloroform $C_{20}H_{19}NO_5{\cdot}CHCl_3$; m.w. 472.54; tri tab. f. chl.; m.p. 179.

berberine hydrochloride. $C_{20}H_{19}NO_5{\cdot}HCl{\cdot}2H_2O$; m.w. 425.65; or. need. yel. powd.; s.w.; s.al.

berberine nitrate. $C_{20}H_{19}NO_5{\cdot}HNO_3$; m.w. 416.17; yel. need.; s.w.

berberine sulfate. $C_{20}H_{19}NO_5{\cdot}H_2SO_4$; m.w. 451.23; yel. need.; s.w.; s.a

berberine, tetrahydro-. See canadine hydroberberine.

berberonic acid (2, 4, 5-pyridinetr carboxylic acid). $C_5H_2N(COOH)_3{\cdot}1\frac{1}{2}H_2O$; m.w. 238.07; tricl. pr.; m. 235, anh. 243; s.w.; s.al.

engelite. A Peruvian, bituminous, sinous mineral used for caulking ips.

gamot oil. See oil, bergamot.

ginization. See Bergius process.

gius process. Manufacture of liquid uels from coal. Powdered coal is ixed with oil and hydrogen under oderately high temperatures and igh pressures.

lin red. See iron oxide, Fe_2O_3.

noulli's theorem. At any point in tube thru which a liquid is flowing he sum of the pressure energy, po- ential energy, and kinetic energy is a onstant; pressure is smallest at oints of greatest velocity. This heorem finds application in the water spirator and atomizer.

rtrandite. A mineral; $4BeO \cdot 2SiO_2 \cdot H_2O$; rhomb., col., pa. yel.; sp.gr. 2.571-2.60; hardness 6-7.

ryl. A mineral; $3BeO \cdot Al_2O_3 \cdot 6SiO_2$; hex., grn., bl., col.; sp.gr. 2.63-2.91; hardness 7.5-8.0; see also beryllium aluminum silicate.

ryllium (glucinum). Be(Gl); m.w. 9.02; hex.; s.g. 1.85; m.p. 1350; b.p. 1530 [5]; i.w.; a metallic element, resembling magnesium in appearance and chemical properties, and hard enough to scratch glass; prepared by electrolysis, chiefly from beryllium aluminum silicates; used in making alloys which are strong, light and resistant to corrosion.

eryllium acetate. $Be(C_2H_3O_2)_2$; m.w. 127.07; plates; m.p. d. 300; i.w.; i.al.

eryllium acetate, basic. $BeO \cdot 3Be(C_2H_3O_2)_2$; m.w. 406.22; oct.; s.g. 1.36 [4]; m.p. 284; b.p. 331; s.al.

eryllium acetate, basic, propionate. $BeO \cdot 3Be(C_2H_5O_2)(C_3H_5O_2)$; m.w. 448.27; m.p. 127; b.p. 330.

eryllium acetyl acetonate. $Be(C_5H_7O_2)_2$; m.w. 207.13; monocl. wh.; s.g. 1.168 [4]; m.p. 108; b.p. 270; s.w.; s.al.

eryllium aluminate. $Be(AlO_2)_2$; m.w. 126.96; rhomb.

eryllium aluminate (chrysoberyll). $Be(AlO_2)_2$; m.w. 129.96; rhomb.; s.g. 3.76.

eryllium aluminum silicate (beryl). $3BeO \cdot Al_2O_3 \cdot 6SiO_2$; m.w. 537.36; hex. col., trans.; s.g. 2.66; m.p. 1410±100.

eryllium aluminum silicate (euclase). $2BeO \cdot Al_2O_3 \cdot 2SiO_2 \cdot H_2O$; m.w. 290.12; monocl.; s.g. 3.1.

eryllium benzene sulfonate. $(C_6H_5SO_3)_2Be$; m.w. 323.22; monocl.; s.w.; s.al.

eryllium borate, ortho-, basic (hambergite). $Be_2(OH)BO_3$; m.w. 93.87; rhomb.; sp.gr. 2.35.

eryllium bromide. $BeBr_2$; m.w. 168.85; wh. need.; deliq.; s.g. 3.465 [25]; m.p. 490±10; b.p. 520; s.w.; s.al.

eryllium butyrate, basic. $BeO \cdot 3Be(C_4H_7O_2)_2$; m.w. 574.40; b.p. 239 [19].

eryllium carbide. Be_2C; m.w. 30.04; hex. yel.; s.g. 1.90 [15].

eryllium carbonate. $BeCO_3 \cdot 4H_2O$; m.w. 141.08; col.; m.p. $-4H_2O$ 100.

eryllium carbonate, basic. $(BeO)_4CO_2 \cdot 5H_2O$; m.w. 259.18; wh. powd.; i.w.

eryllium chloride. $BeCl_2$; m.w. 79.93; col. need., deliq.; sp.gr. 1.899 [15]; m.p. 440±10; b.p. 520; s.w.; s.al.

eryllium chloride (hydrated). $BeCl_2 \cdot 4H_2O$; m.w. 152.00; monocl. wh.; deliq.; m.p. 600; s.w.; s.al.

eryllium, di-n-butyl-. $Be(C_4H_9)_2$; m.w. 123.16; col. liq.; b.p. 170 [25].

eryllium, diethyl-. $Be(C_2H_5)_2$; m.w. 67.10; col. liq.; m.p. 12; b.p. 110 [15].

eryllium, dimethyl-. $Be(CH_3)_2$; m.w. 39.07; wh. need.; b.p. subl. 200.

eryllium, dipropyl-. $Be(C_3H_7)_2$; m.w. 95 13; liq.; m.p. < -17; b.p. 245.

eryllium fluoride. BeF_2; m.w. 47.02; amor. col.; s.g. 1.986 [25]; m.p. 800; s.w.; s.al.

eryllium fluoride, basic. $2BeO \cdot 5BeF_2$; m.w. 285.14; s.g. 2.01 [15].

eryllium hydroxide. $Be(OH)_2$; m.w. 43.04; wh. amor. powd. or cr.; s.g. 1.909 (cr.); i.w.

beryllium iodide. BeI_2; m.w. 262.86; col. need.; s.g. 4.325 [25]; m.p. 510±10; b.p. 590; s.al.

beryllium nitrate. $Be(NO_3)_2 \cdot 3H_2O$; m.w. 187.08; wh.-yelsh. cr., deliq.; m.p. 60; s.w.; s.al.

beryllium nitride. Be_3N_2; m.w. 55.08; col. cr.; m.p. 2200±100; i.al.

beryllium oxalate. $Be(C_2O_4) \cdot 3H_2O$; m.w. 151.07; rhomb.; m.p. $-2H_2O$ 100, $-H_2O$ 220; b.p. d. 350; s.w.

beryllium oxide (bromellite). BeO; m.w. 25.02; hex. wh. or amor. powd.; s.g. 3.025; m.p. 2570; b.p. *ca.* 3900.

beryllium oxychloride. Be_2OCl_2; m.w. 104.95; i.w.

beryllium phosphate, ortho-. $Be_3(PO_4)_2 \cdot 3H_2O$; m.w. 271.15; m.p. $-H_2O$ 100; s.w.

beryllium potassium fluoxide. $BeF_2 \cdot 2KF$; m.w. 163.22; rhomb. col.

beryllium propionate, basic. $BeO \cdot 3Be(C_3H_5O_2)_2$; m.w. 490.31; m.p. 120.

beryllium selenate. $BeSeO_4 \cdot 4H_2O$; m.w. 224.28; rhomb.; s.g. 2.03; m.p. $-H_2O$ 100.

beryllium silicate (bertrandite). $2Be_2(SiO_4) \cdot H_2O$; m.w. 238.22; rhomb.; s.g. 2.6.

beryllium silicate (phenacite). Be_2SiO_4; m.w. 110.10; tricl.; s.g. 3.0.

beryllium sodium fluoride. $BeF_2 \cdot 2NaF$; m.w. 131.01; rhomb. or monocl. wh.

beryllium sulfate. $BeSO_4$; m.w. 105.08; s.g. 2.443; i.w.

beryllium sulfate (hydrated). $BeSO_4 \cdot 4H_2O$; m.w. 177.14; tetr. col.; s.g. 1.713 [10.5]; m.p. $-2H_2O$ 100; b.p. $-4H_2O$, 250; s.w.; i.al.

beryllium sulfide. BeS; m.w. 41.08; s.g. 2.36.

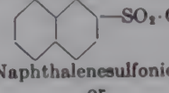
beryllonite. A mineral, $NaBePO_4$; rhomb., col. to wh., pa.yel.; sp.gr. 2.845; hardness 5.5-6.0.

berzelianite. A natural copper selenide, Cu_2Se.

Bessel equation. Linear differential equation whose solutions are expressible as power series in x called Bessel's functions or integrals.

Bessemer process. Method for producing steel from cast iron utilizing oxidation of the molten metal with air to remove silicon, carbon and manganese.

beta (β). A prefix applied to condensed nuclei hydrocarbon with a substituent group in the 2, 3, 6 or 7 position, e.g



2-Naphthalenesulfonic acid
or
β-Naphthalene sulfonic acid

beta compound. See alpha compound. In this case, the substituting group is in the second (or beta) position, e.g. β-amino-propionic acid, $NH_2CH_2—CH_2—COOH$.

beta rays. Electrons emitted by radioactive materials.

beta transformation. Radioactive transformation characterized by the loss of an electron from the atomic nucleus.

betacaine. See β-eucaine.

beta-chloranthraquinone. See anthraquinone, 2-chloro-.

betaine (lycine; oxyneurine; trimethylglycocoll; [carboxymethyl] trimethylammonium hydroxide anhydride). $COCH_2N(CH_3)_3O$; m.w. 117.09; col. monocl. pr. or leaf.; s.w.; s.al.

betaines. Amino acids in which the nitrogen atom is directly attached to two methyl groups, e.g. $CH_2—N(CH_3)_2$ / $CO—O$

Betasol OT-A. A sulfonated ester of a dicarboxylic acid used as a wetting agent in the leather industry.

betel nut. See areca nut.

betel phenol. See chavibetol.

bethanizing. Process of electro-depositing very pure zinc on iron or steel.

betol (2-naphthyl salicylate; β-naphthyl salicylate). $HOC_6H_4COOC_{10}H_7$; m.w. 264.09; cr.f.al.; m.p. 95; i.w.; s.al.

betorcinol. See resorcinol, 2, 5-dimethyl-.

Betts process. The electrolytic refining of lead using as electrolytes fluosilicic acid, H_2SiF_6, and lead fluosilicate, $PbSiF_6$.

betula camphor. See betulinol.

betula oil. See oil, betula.

betulin. See betulinol.

betulinic acid. $C_{30}H_{54}O_3$; m.w. 582.42; wh. powd.; m.p. 195; s.w.; s.al.

betulinol (betulin; betula camphor; birch camphor). $C_{30}H_{50}O_2$(?); m.w. 540.47; need. f.al.; m.p. 251; i.w.; s.al.

Bezet Harz. Synthetic tar-acid resin.

bi-. Prefix, two, twice, e.g. mercury *bi*chloride, $HgCl_2$; acid, e.g. sodium *bi*sulfate or sodium *acid* sulfate, $NaHSO_4$.

p, p'-biacetanilide. See benzidine, N, N'-diacetyl-.

biacetyl. See 2, 3-butanedione.

biacetylene. See butadiyne.

biacetyl mono-oxime. See 2, 3-butanedione, mono-oxime.

biallyl. See 1, 5-hexadiene.

o, p'-bianiline. See 2, 4'-biphenyldiamine.

b, p'-bianiline. See benzidine.

4, 4'-bi-o-anisidine (2, 2'-dimethoxybenzidine). $[CH_3O(NH_2)C_6H_3]_2$; m.w. 244.14; col. need. or leaf.; m.p. 137-8; s.w.; s.al.

biarsine, tetramethyl-. See arsine, tetramethyl bi-.

biarsine, tetraethyl-. See arsine, tetraethyl bi-.

bias. Permanent negative potential applied to a vacuum tube grid.

o, o'-bibenzoic acid. See diphenic acid.

bibenzoyl. See benzil.

bibenzyl (sym- or 1, 2-diphenylethane; dibenzyl). $C_6H_5CH_2CH_2C_6H_5$; m.w. 182.11; col. monocl. need. f.al.; m.p. 52.5; b.p. 284; i.w.; s.al.

bibenzyl, 4, 4'-diamino-. See α, α'-bi-p-toluidine.

bi-sec-butyl. See hexane, 3, 4-dimethyl-.

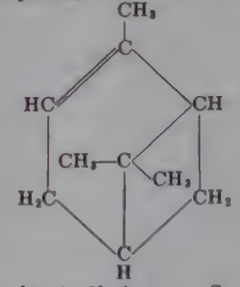
bi-tert-butyl. See butane, 2, 2, 3, 3-tetramethyl-.

2, 2'-bicamphane-2, 2'-diol. See camphor pinacol.

bicarbonate of soda. See sodium acid carbonate.

bichromate of potash. See potassium chromate, di-

bicyclic terpene. A terpene containing one double bond and two carbon rings, e.g. α-pinene,



bicyclo [4, 4, 0] decane. See naphthalene, decahydro-.

bicyclo [2, 2, 1] heptane. See norcamphane.

bicyclo- [2, 2, 1] hept-2-ene, 1, 7, 7-trimethyl-. See bornylene.

bicyclo [3, 1, 1] hept-2-ene, 2, 6, 6-trimethyl-. See pinene.

bicyclo [3, 1, 0] hexane, 1-isopropyl-4-methylene-. See sabinene.

bieberite. See cobalt sulfate (ous).

biethylene. See 1, 3-butadiene.

biformyl. See glyoxal.

biguanide (guanylguanidine; diguanide). $NH_2C(:NH)NHC(:NH)NH_2$; m.w. 101.09; amor. or pr.f.al.; m.p. 130; s.w.; s.al.

biguanide, o-o-tolyl-. $C_7H_7NHC(:NH)NHC(:NH)NH_2 \cdot \frac{1}{2}H_2O$; m.w. 200.15; wh. cr.; m.p. $\frac{1}{2}H_2O$ 140-4, anh. 145-6; s.w.; s.al.

bihexyl. See dodecane.

biisoamyl. See octane, 2, 7-dimethyl-.

biisobutyl. See hexane, 2, 5-dimethyl-.

biisopropenyl. See 1, 3-butadiene, 2, 3-dimethyl-.

biisopropyl. See butane, 2, 3, dimethyl-.

bikhaconine, acetylveratryl-. See bikhaconitine.

bikhaconitine (acetylveratrylbikhaconine). $C_{36}H_{51}NO_{11}$; m.w. 673.41; cr.; m.p. 113; s.al.

bikhaconitine, acetylveratryl-. See bikhaconitine.

bile. The liver secretion, discharged into the duodenum. Among its principal components are water (about 90%), bile salts (sodium glycocholate and taurocholate), and the bile pigments (bilirubin and biliverdin). Its chief function is the aiding of digestion and absorption of fats.

bile acid. One of the hydroxy carbonic acids which exist in the bile as sodium salts, conjugated with taurine or glycine.

bilifuscin. $C_{16}H_{20}N_2O_4$; m.w. 304.17; br. powd.; m.p. 183; s.w.; s.al.

bilineurine. See choline.

bilirubin. $C_{32}H_{36}N_4O_6$; m.w. 572.31; br. rhomb. cr.; m.p. 192-2.5; i.w.; s.al.

biliverdin. $C_{32}H_{36}N_4O_8$; m.w. 604.31; grn.-blk. powd.; i.w.; s.al.

bimolecular reaction. See reaction, bimolecular.

1, 1'-bi-2-naphthol (β-dinaphthol; 2, 2'-dihydroxy-1, 1'-binaphthyl). $HOC_{10}H_6C_{10}H_6OH$; m.w. 286.11; need. f.al. or tol.; m.p. 218; i.w.; s.al.

4, 4'-bi-1-naphthol (α-dinaphthol; 4, 4'-dihydroxy-1, 1'-binaphthyl). $HOC_{10}H_6C_{10}H_6OH$; m.w. 286.11; rhomb. f.al.; m.p. 300; i.w.; s.al.

1, 1'-binaphthyl (α, α'-dinaphthyl). $C_{10}H_7C_{10}H_7$; m.w. 254.11; col. rhomb. leaf. f.al.; m.p. 160.5; b.p. ca 360; i.w.; s.al.

1, 1'-binaphthyl, 2, 2'-dihydroxy-. See 1, 1'-bi-2-naphthol.

1, 1'-binaphthyl, 4, 4'-dihydroxy-. See 4, 4'-bi-1-naphthol.

2, 2'-binaphthyl (β, β'-dinaphthyl). $C_{10}H_7C_{10}H_7$; m.w. 254.11; col. pl.; m.p. 187-8; b.p. 452; i.w.; s.al.

binary alloy. An alloy of two metals.

binary fission. The simplest method of reproduction whereby unicellular organisms divide in half to form new organisms.

binary system. A system having two components.

binder. An adhesive; cement.

binding energy. Quantity of energy released on formation of an atom or molecule from alpha particles, protons, electrons, etc. at the expense of the total mass.

binding moment. That part of the dipole moment which disappears upon separation of homopolar valence. See bond moment.

bindschedler green, leuco base. See diphenylamine, p, p'-bisdimethylamino-.

binomial. An algebraic expression of two terms, e.g. $3x - 2$.

biochemistry. The chemistry of living processes; the study of physiologically essential substances and their transformations in plant and animal organisms.

bioctyl. See hexadecane.

biodyne. Factor or substance released by injured cells, the function of which is to increase growth.

biogenesis. Genesis of living things from living things, as contrasted with abiogenesis, which is spontaneous generation, or production of animate from the inanimate.

biological stain. Dye for better defining microscopic structure of cells and tissues. Usefulness depends on selective adsorption of dye by bacteria or tissue.

bioluminescence. Emission of light by living organisms.

biolysis. Decomposition effected by living organisms.

biophysics. Study of physical processes occurring in living organisms; inter-

relation of the physical and biochemical processes in the study of biology.

bioplasm. Protoplasm; the basic and elementary matter of which all living substance is composed, a semi-fluid colloidal dispersion.

bios. Substances of unknown composition believed to be necessary for the optimum growth of yeasts.

biota. Study of the living organisms of a particular place or period.

biotite (black mica). A mineral; $(K, H)_2(Mg, Fe)_3(Al, Fe)_2(SiO_4)_3$; monocl., blk. or dk. br. or grn.; sp.gr. 2.69-3.16; hardness 2.5-3.0.

bioxirane. See i-erythritol, anhydride.

bipartition angle. Angle between a beam of x-rays going thru a layer of material and the conical surface in which lie the paths of half the electrons ejected from the layer by the rays.

m, m'-biphenol (3, 3'-dihydroxybiphenyl). $HOC_6H_4C_6H_4OH$; m.w. 186.08; need. f.w.; m.p. 123-4; b.p. 247 [15]; s.w.; s.al.

o, o'-biphenol (2, 2'-dihydroxybiphenyl). $HOC_6H_4C_6H_4OH$; m.w. 186.08; pr. f.tol.; leaf. (hyd.) f.w.; m.p. hyd. 73-5, anh. 109-10; b.p. 326; s.w.; s.al.

o, p'-biphenol (2, 4'-dihydroxybiphenyl). $HOC_6H_4C_6H_4OH$; m.w. 186.08; monocl. pr. or need.; m.p. 162-3; b.p. 342; s.w.; s.al.

p, p'-biphenol (4, 4'-dihydroxybiphenyl). $HOC_6H_4C_6H_4OH$; m.w. 186.08; rhomb. need. or pl. f.al.; m.p. 274-5; s.w.; s.al.

p, p'-biphenol-3, 3'-dimethyl-. $C_{14}H_{14}O_2$. m.w. 214; m.p. 157; s.al., i.w.; an intermediate and coupling agent.

p, p'-biphenol, 2, 2', 6, 6'-tetramethoxy-. See hydroceruligonone.

p, p'-biphenol, 3, 3', 5, 5'-tetranitro-. $[C_6H_2(NO_2)_2OH]_2$; m.w. 366.08; yel. need.; m.p. 222-5; i.w.; s.al.

biphenyl (diphenyl; phenylbenzene). $C_6H_5C_6H_5$; m.w. 154.08; col. monocl.; m.p. 69-71; b.p. 254-5; i.w.; s.al.

m-biphenylamine (3-aminobiphenyl). $NH_2C_6H_4C_6H_5$; m.w. 169.09; col. leaf. or need.; m.p. 30; b.p. 254 [135]; s.w.; s.al.

o-biphenylamine (2-aminobiphenyl). $NH_2C_6H_4C_6H_5$; m.w. 169.09; col. leaf.; m.p. 49.3; b.p. 299; i.w.; s.al.

p-biphenylamine. See xenylamine.

biphenyl, 2-amino-. See o-biphenylamine.

biphenyl, 3-amino-. See m-biphenylamine.

biphenyl, 4-amino-. See xenylamine.

biphenyl, 2-amino-4, 4'-diamino-. See benzidine, 3-amino-.

biphenyl, o-amino-p, p'-diamino-. See benzidine, 3-amino-.

biphenyl, 2-benzyl- (1-benzyl-2-phenylbenzene). $C_6H_5CH_2C_6H_4C_6H_5$; m.w. 244.12; monocl. need.; m.p. 54; b.p. 283-7 [119]; i.w.; s.al.

biphenyl, 4-benzyl- (1-benzyl-4-phenylbenzene). $C_6H_5CH_2C_6H_4C_6H_5$; m.w. 244.12; leaf.; m.p. 85; b.p. 285-6 [100]; i.w.; s.al.

biphenyl, 2-bromo- (2-bromodiphenyl). $C_6H_5C_6H_4Br$; m.w. 232.99; liq.; m.p. <-20; b.p. 296-8; i.w.; s.al.

biphenyl, 4-bromo- (4-bromodiphenyl). $C_6H_5C_6H_4Br$; m.w. 232.99; col. pl.f.al.; m.p. 89-90; b.p. 310; i.w.; s.al.

biphenyl, 3-bromo-4-hydroxy- (2-bromparaxenol, 2-bromo-4-phenyl phenol). $C_6H_5C_6H_3BrOH$; m.w. 249.0; light-col. cryst.; b.p. 195-200 (18 mm.); m.p. above 87.0; i.w.; s.alk.; used as a germicide.

biphenyl carboxylic acid. See benzoic acid, phenyl-.

biphenyl, 2-chloro- (o-chlorodiphenyl). $ClC_6H_4C_6H_5$; m.w. 188.53; monocl.; m.p. 32; b.p. 273-4; i.w.; s.al.

biphenyl, 3-chloro- (m-chlorodiphenyl). $ClC_6H_4C_6H_5$; m.w. 188.53; cr.; m.p. 89; b.p. 284.5; i.w.; s.al.

biphenyl, 4-chloro- (p-chlorodiphenyl). $ClC_6H_4C_6H_5$; m.w. 188.53; leaf. f. lgr. or al.; m.p. 77; b.p. 291.2 [746]; i.w.; s.al.

biphenyl, 3-chlor-4-hydroxy-. $C_6H_5C_6H_3ClOH$; m.w. 204.5; cryst. sol.; b.p. 160-162 at 7 mm.; m.p. above 77.0; s.alk.; i.w.; germicide.

2, 4'-biphenyldiamine (o, p'-bianiline; diphenyline; 2, 4'-diaminobiphenyl). $NH_2C_6H_4C_6H_4NH_2$; m.w. 184.11; need. f.dil.al.; m.p. 45; b.p. 363; s.w.; s.al.

biphenyl, 2, 4'-diamino-. See 2, 4'-biphenyldiamine.

biphenyl, 4, 4'-diamino-. See benzidine.

biphenyl, 4, 4'-diamino-3-ethoxy-. See benzidine, 2-ethoxy-.

biphenyl, 4, 4'-dibromo- (p, p'-dibromodiphenyl). $BrC_6H_4C_6H_4Br$; m.w. 311.89; monocl. pr.; m.p. 164; b.p. 355-60; i.w.; s.al.

2, 2'-biphenyldicarbonyl chloride. See diphenoyl chloride.

2, 2'-biphenyldicarboxylic acid. See diphenic acid.

biphenyl, 4, 4'-dichloro- (4, 4'-dichlorodiphenyl). $ClC_6H_4C_6H_4Cl$; m.w. 222.98; monocl. pr. or need. f.tol.; m.p. 148-9; b.p. 315-9; i.w.

biphenyl, 4, 4'-dichloro-2, 2'-dinitro-. $Cl(NO_2)C_6H_3C_6H_3(NO_2)Cl$; m.w. 312.98; yel. need. f.al.; m.p. 138; i.w.; s.al.

biphenyl, 2, 2'-dihydroxy-. See o, o'-biphenol.

biphenyl, 2, 4'-dihydroxy-. See o, p'-biphenol.

biphenyl, 3, 3'-dihydroxy-. See m, m'-biphenol.

biphenyl, 4, 4'-dihydroxy-. See p, p'-biphenol.

biphenyl, 4, 4'-dihydroxy-3, 3'-dimethyl-. See p, p'-biphenol-3, 3'-dimethyl-.

biphenyl, 2, 2'-dimethyl-. See o, o'-bitolyl.

biphenyl, 2, 3'-dimethyl-. See o, m'-bitolyl.

biphenyl, 3, 3'-dimethyl-. See m, m'-bitolyl.

biphenyl, 4, 4'-dimethyl-. See p, p'-bitolyl.

biphenyl, 2, 2'-dinitro- (o, o'-dinitrodiphenyl). $NO_2C_6H_4C_6H_4NO_2$; m.w. 244.08; yelsh. monocl. need.; m.p. 124; i.w.; s.al.

biphenyl, 2, 4'-dinitro- (o, p'-dinitrodiphenyl). $NO_2C_6H_4C_6H_4NO_2$; m.w. 244.08; col. monocl. need. or pr.; m.p. 93.5; i.w.; s.al.

biphenyl, 3, 3'-dinitro- (m, m'-dinitrodiphenyl). $NO_2C_6H_4C_6H_4NO_2$; m.w. 244.08; or.-yel. need.; m.p. 200; i.w.; s.al.

biphenyl, 4, 4'-dinitro- (p, p'-dinitrodiphenyl). $NO_2C_6H_4C_6H_4NO_2$; m.w. 244.08; need. f.al.; m.p. 233; i.w.; s.al.

2, 2'-biphenyldisulfonic acid, 4, 4'-diamino-. See 3, 3'-benzidinedisulfonic acid.

biphenylene oxide. See dibenzofuran.

biphenylene sulfone, 2, 7-diamino-. See benzidine sulfone.

biphenyl, 2-ethoxy-. $C_6H_5C_6H_4OC_2H_5$; m.w. 198.11; pr.; m.p. 34; b.p. 276; s.al.

biphenyl, 3-ethoxy-. $C_6H_5C_6H_4OC_2H_5$; m.w. 198.11; cr.; m.p. 34; b.p. 305; s.al.

biphenyl, 1, 2, 3, 4, 5, 6-hexahydro-. See cyclohexane, phenyl-.

biphenyl, hydroxy-. See phenol, phenyl-.

biphenyl, 4-iodo-. $C_6H_5C_6H_4I$; m.w. 279.99; col. cr. f.ac.a.; m.p. 113-4; i.w.; s.al.

biphenyl mercury. See mercury, biphenyl-.

biphenyl, 2-methoxy-. $C_6H_5C_6H_4OCH_3$; m.w. 184.09; pr.; m.p. 29; b.p. 274.

biphenyl, 4-methoxy-. $C_6H_5C_6H_4OCH_3$; m.w. 184.09; leaf.; m.p. 90; s.al.

biphenyl, 2-methyl- (o-phenyltoluene). $C_6H_5C_6H_4CH_3$; m.w. 168.09; col. liq.; b.p. 260; i.w.; s.al.

biphenyl, 3-methyl- (m-phenyltoluene). $C_6H_5C_6H_4CH_3$; m.w. 168.09; col. liq.; b.p. 277; i.w.; s.al.

biphenyl, 4-methyl- (p-phenyltoluene). $C_6H_5C_6H_4CH_3$; m.w. 168.09; col. liq.; m.p. -3; b.p. 267; i.w.; s.al.

biphenyl, 2-nitro-. $C_6H_5C_6H_4NO_2$; m.w. 199.08; rhomb. bipy. leaf. f.al.; m.p. 37; i.w.; s.al.

biphenyl, 3-nitro-. $C_6H_5C_6H_4NO_2$; m.w. 199.08; yel. leaf. f.w. +al.; m.p. 58.5-61; i.w.; s.al.

biphenyl, 4-nitro-. $C_6H_5C_6H_4NO_2$; m.w. 199.08; col. rhomb. bipy. need. f.al.; m.p. 113; b.p. 340; i.w.; s.al.

biphenyl, m-phenyl-. See benzene, 1, 3-diphenyl-.

biphenyl, 3-phenyl-. See benzene, 1, 3-diphenyl-.

biphenyl, 4-phenyl-. See terphenyl.

biphenyl, 3, 3', 3, 5'-tetrahydroxy-. See 5, 5'-biresorcinol.

biphenyl, 2, 2', 4, 4'-tetranitro-. $(NO_2)_2C_6H_3C_6H_3(NO_2)_2$; m.w. 334.08; yel. pr. f.bz.; m.p. 164-5; i.w.; s.al.

p-biphenylyl mustard oil. See isothiocyanic acid, xenyl ester.

biprism. Glass prism of almost 180° vertex angle.

bipropargyl. See 1, 5-hexadiyne.

bipropenyl. See 2, 4-hexadiene.

bipyromucyl. See furil.

4, 4'-bipyridyl (4, 4'- or γ, γ'-dipyridyl). $(C_5H_4N)_2$; m.w. 156.08; need. $(+2H_2O)$. f.w.; m.p. $2H_2O$ 73, anh. 114; b.p. 304.8; s.w.; s.al.

2, 3'-biquinoline (2, 3'-biquinolyl; 2, 3'-diquinolyl). $(C_9H_6N)_2$; m.w. 256.11; yel. pl. or need. f.bz.; m.p. 176-7; b.p. >400; i.w.; s.al.

2, 7'-biquinoline (2, 7'-diquinolyl). $(C_9H_6N)_2$; m.w. 256.11; monocl. pl. f.al.; m.p. 193; i.w.; s.al.

6, 6'-biquinoline (6, 6'-diquinolyl). $(C_9H_6N)_2$; m.w. 256.11; monocl. leaf. f.al.; m.p. 181; s.w.; s.al.

-biquinolyl. See -biquinoline.

birch camphor. See betulinol.

birch oil. See oil, birch.

birefringence. The possession of two refractive indices by a crystal; double refraction. Isotropic materials such as glass and resin, and cubic substances are sometimes birefringent due to strain, as shown by polarized light.

bis (di-). Prefix denoting two, e.g. thio*bis*-acetic acid or thio*di*-acetic acid.

bischofite. See magnesium chloride.

biscuit. Unglazed ceramic ware fired in a bisque oven.

bisect. To cut or divide into two equal parts, as an angle.

Bismarck brown (triamino-azobenzene hydrochloride). $NH_2C_6H_4N{:}NC_6H_3(NH_2)_2 \cdot HCl$. A basic, reddish-brown dye used for dyeing leather, wool, and furniture.

bismite. See bismuth oxide, tri-. ($Bi_2O_3 \cdot 3H_2O$).

bismuth. Bi; m.w. 209.00; hex.; s.g. 9.80; m.p. 271; b.p. 1470; i.w.; a metallic element; crystalline, brittle, white with pinkish tinge; occurring free and as oxide, sulfide and carbonate; obtained by reduction of ores or melting out of free metal, also as by-product in lead smelting; poor electrical conductor; strongly diamagnetic; used in making alloys of low melting point, and which expand in cooling.

bismuth, native. The metal as it occurs naturally; hex., redsh. wh.; sp.gr. 9.70-9.83; hardness 2.0-2.5.

bismuth acetate. $Bi(C_2H_3O_2)_3$; m.w. 386.07; wh. cr.; i.w.

bismuth arsenate, ortho-. $BiAsO_4$; m.w. 347.93; monocl.; s.g. 7.14.

bismuth benzoate. $Bi(C_7H_5O_2)_3$; m.w. 572.12; wh. powd.; i.w.

bismuth bromide, mono-. BiBr; m.w. 288.92; m.p. 287.

bismuth bromide, tri-. $BiBr_3$; m.w. 448.75; yel. cr. powd., deliq.; s.g. 5.7; m.p. 218; b.p. 453; i.al.

bismuth carbonate, sub-. $Bi_2O_3 \cdot CO_2 \cdot H_2O$; m.w. 528.02; wh. powd.; s.g. 6.86; i.w.

bismuth chloride, di-. $BiCl_2$ (exist. quest.); m.w. 279.91; blk. need.; s.g. 4.86; m.p. 163.

bismuth chloride, tetra-. $BiCl_4$; m.w. 350.83; col.; m.p. 225.

bismuth chloride, tri-. $BiCl_3$; m.w. 315.37; wh. cr. deliq.; s.g. 4.75; m.p. 230-2; b.p. 447; s.al.

bismuth chromate, di-, basic. $(BiO)_2Cr_2O_7$; m.w. 666.02; yel.-or. red.; i.w.

bismuth citrate. $BiC_6H_5O_7$; m.w. 398.04; wh. cr.; s.g. 3.458; s.w.; s.al.

bismuth fluoride. BiF_3; m.w. 266.00; s.g. 5.32.

bismuth hydride (bismuthine). BiH_3; m.w. 212.02; liq.; b.p. 22.

bismuth hydroxide. $Bi(OH)_3$; m.w. 260.02; wh. amor. powd.; s.g. 4.36; m.p. $-H_2O$, 100; b.p. $-1\frac{1}{2}H_2O$ 400.

bismuth iodate. $Bi(IO_3)_3$; m.w. 733.76; wh.; i.w.

bismuth iodide. BiI_3; m.w. 589.76; hex. redsh. br.-gray bl.; s.g. 5.7; m.p. 439; i.w.

bismuth lactate. $Bi(C_3H_5O_3) \cdot 7H_2O$; m.w. 512.18; s.w.

bismuth nitrate (hydrated). $Bi(NO_3)_3 \cdot 5H_2O$; m.w. 485.10; tricl. col., al. hyg.; s.g. 2.83; b.p. $-5H_2O$ 80. $Bi(NO_3)_3 \cdot 6H_2O$; m.w. 503.12; s.g. 2.76.

bismuth nitrate, sub-. $BiONO_3 \cdot H_2O$; m.w. 305.02; hex. pl. or wh. powd.; s.g. 4.928 [15]; i.w.; i.al.

bismuth oxalate. $Bi_2(C_2O_4)_3$; m.w. 682.00; i.w.

bismuth oxide. See bismuth oxide, tri-.

bismuth oxide, di-. BiO_2; m.w. 241.00; s.g. 5.6.

bismuth oxide, di- (hydrated). $BiO_2 \cdot 2H_2O$; m.w. 277.03; br.-yel.; s.g. 5.6; m.p. $-H_2O$ 110; b.p. $-2H_2O$ 180, $-O$ 305; i.w.

bismuth oxide, pent-. Bi_2O_5; m.w. 498.00; br. or dk. red.; s.g. 5.10; m.p. $-O$ 150; b.p. $-2O$ 357; i.w.

bismuth oxide, pent- (metabismuthic acid). $Bi_2O_5 \cdot H_2O$; or $HBiO_3$; m.w. 516.02, or 258.01; red; s.g. 5.75; m.p. $-H_2O$ 120; b.p. $-2O$ 300; i.w.

bismuth oxide, tri-. Bi_2O_3; m.w. 466.00; rhomb. yel.; s.g. 8.9; m.p. 820; b.p. 1890(?); i.w.

bismuth oxide, tri-. Bi_2O_3; m.w. 466.00; cub. gray-blk.; s.g. 8.20; i.w.

bismuth oxide, tri-. Bi_2O_3; m.w. 466.00; rhomb.; s.g. 8.5; m.p. 860.

bismuth oxide tri- (bismite). $Bi_2O_3 \cdot 3H_2O$; m.w. 520.05; rhomb.; s.g. 4.36.

bismuth oxybromide. BiOBr.; m.w. 304.92; col. cr. or wh. powd.; s.g. 8.08; i.w.; i.al.

bismuth oxychloride. BiOCl; m.w. 260.46; cr. or wh. powd.; s.g. 772; i.w.

bismuth oxyfluoride. BiOF; m.w. 244.00; wh. cr. or powd.; s.g. 7.5; i.w.

bismuth oxyiodide. BiOI; m.w. 351.92; rhomb. red. cr.; s.g. 7.92; i.w.; i.al.

bismuth phosphate, ortho-. $BiPO_4$; m.w. 304.02; monocl. wh.; s.g. 6.323 [15]; i.w.; s.al.

bismuth propionate. $BiO \cdot C_2H_5COO$; m.w. 298.04; wh. powd.; faint odor prop. acid; i.w.; i.al.

bismuth salicylate. $Bi(C_7H_5O_3)_3$; m.w. 620.12; wh. powd.; m.p. 135 d.

bismuth selenide (guanajuatite). Bi_2Se_3; m.w. 655.60; rhomb blk.; s.g. 6.82; m.p. 710; i.w.

bismuth sulfate. $Bi_2(SO_4)_3$; m.w. 706.18; wh. need.; s.g. 5.08 [15].

bismuth sulfide (bismuthinite). Bi_2S_3; m.w. 514.18; rhomb. br.-blk.; s.g. 7.39.

bismuth sulfide, mono-. BiS; m.w. 241.06; gray; sp.gr. 7.7; m.p. 685.

bismuth tartrate. $Bi_2(C_4H_4O_6)_3 \cdot 6H_2O$; m.w. 970.19; wh. powd.; s.g. 2.595 [25]; m.p. $-3H_2O$, 105; i.w.; i.al.

bismuth tellurate (montanite). $Bi_2TeO_6 \cdot 2H_2O$; m.w. 677.53; biaxial; s.g. 3.79.

bismuth, telluric. See joséite.

bismuth telluride. Bi_2Te_3; m.w. 800.50; s.g. 7.7; m.p. 573.

bismuth, triethyl- (triethylbismuthine; bismuth triethyl). $Bi(C_2H_5)_3$; m.w. 296.12; col. liq.; i.w.; s.al.

bismuth, trimethyl- (trimethylbismuthine). $(CH_3)_3Bi$; m.w. 440.12; monocl.; m.p. 77-8; b.p. 242 [14]; i.w.; s.al.

bismuth, triphenyl- (triphenylbismuthine). $(C_6H_5)_3Bi$; m.w. 440.12

nonocl.; m.p. 77-8; b.p. 242 [14]; i.w. al.

muth white. See bismuth oxide, tri-.

muthic acid, meta-. See bismuth oxide, penta-.

muthine. See bismuth hydride.

muthine, methyl-. CH_3BiH_2; m.w. 226.04 liq.; s.g. 2.30 [18]; b.p. 110; i.w.; s.al.

muthine, triethyl-. See bismuth, triethyl-.

muthine, trimethyl-. See bismuth, trimethyl-.

muthine, triphenyl-. See bismuth, triphenyl-.

muthinite. See bismuth sulfide.

muthyl. Referring to bismuth in combination. Thus bismuthyl nitrate is the same as bismuth nitrate.

que. Unburned, dried enamel coating.

ulfate. Acid salt of sulfuric acid, e.g. sodium bisulfate, $NaHSO_4$.

ulfite. Acid salt of sulfurous acid, e.g. sodium bisulfite, $NaHSO_3$.

2'-bithienyl. See 2, 2'-bithiophene.

2'-bithiophene (2, 2'-bithienyl; α, α-dithienyl) $(C_4H_3S)_2$; m.w. 166.17; col. leaf.; m.p. 33; b.p. 260; i.w.; s.al.

2'-bithiophene, hexabromo- (perbromo-α, α-dithienyl). $(C_4Br_3S)_2$; m.w. 639.62; need.; m.p. 255; i.al.

4'-bi-o-toluidine. See o-tolidine.

a'-bi-p-toluidine (4, 4'-diaminobibensyl; 4, 4'-diamino-s-diphenylethane). $H_2NC_6H_4C_2H_4C_6H_4NH_2$; m.w. 212.14; lust. pl.f.w.; m.p. 134-5; s.w.; s.al.

, m'-bitolyl (3, 3'-dimethylbiphenyl; m, m'-ditolyl). $CH_3C_6H_4C_6H_4CH_3$; m.w. 182.11; col. visc. liq.; m.p. 5-7; b.p. 286-7 [75]; i.w.; s.al.

, m'-bitolyl (2, 3'-dimethylbiphenyl). $CH_3C_6H_4C_6H_4CH_3$; m.w. 182.11; col. liq.; b.p. 270; i.w.; s.al.

, o'-bitolyl (2, 2'-dimethylbiphenyl). $CH_3C_6H_4C_6H_4CH_3$; m.w. 182.11; col. liq. or cr.f.al.; m.p. 17.8; b.p. 272; i.w.; s.al.

, p'-bitolyl (4, 4'-dimethylbiphenyl). $CH_3C_6H_4C_6H_4CH_3$; m.w. 182.11; col. monocl. pr.f.et.; m.p. 121; b.p. 273-6; i.w.; s.al.

bitter almond oil. See oil, bitter almond.

bitter ash. See quassia.

bitter orange-flower oil. See oil, neroli.

bitter streak. Characteristic deposit of colloidal γ-Fe_2O_3 particles on polished surfaces of ferromagnetic single crystals.

bitter wood. See quassia.

bittern. Liquid left after salt has been crystallized from sea-water.

bittiness. Speckiness in glossy finishes.

Bitumastic. Name of a special type of coating material made with a specially refined coal-tar pitch and filler.

bitumen. Generic term for mixtures of natural and pyrogenous hydrocarbons and of their non-metallic derivatives, which may be either gaseous, liquid, viscous or solid, and are soluble in carbon disulfide.

bituminous. Referring to soft coal; a coal containing volatile matter; the most important of all fuels.

biuret (allophanamide; carbamylurea; ureidoformamide). $NHCONH_2 \cdot CONH_2 \cdot H_2O$; m.w. 121.08; col. need. $(+1H_2O)$; anh. f.al.; m.p. 190; s.w.; s.al.

biuret reaction. Rose color produced when certain substances in alkaline solution are treated with copper sulfate solution, e.g. proteins. The chemical biuret (q.v.) itself gives this reaction, hence the name of the test.

biuret, acetyl- (acetylallophanamide). $CH_3CONHCONHCONH_2$; m.w. 145.08; col. need.; m.p. 193; s.w.; s.al.

bivalent. Term applied to two homologous chromosomes which have paired at meiosis and are held together; in chemistry, referring to a combining power or valency of two.

bivinyl. See 1, 3-butadiene.

bivinyl, α-methyl-. See 1, 3-pentadiene.

bivinyl, β-methyl-. See isoprene.

bixine. See annatto.

black ash. Mixture of sodium carbonate, carbon and mineral matter obtained in caustic recovery system in paper manufacture.

black balsam. See Peru balsam.

black body. A theoretical thermodynamic surface which absorbs all radiation falling on it and does not reflect, transmit or scatter any radiation.

black body temperature. Temperature measured by a radiation pyrometer which has been calibrated against a black body.

black boy gum. See gum accroides.

black damp. See choke damp.

black East India gum. See gum, black East India.

black, hard. See bone black.

black hematite. See psilomelane.

black henbane. See henbane.

black lead. See graphite.

black liquor. See iron acetate liquor.

black mica. See biotite.

black oxide of manganese. See manganese oxide, di-.

black root. See leptandra.

black, soft. Vegetable charcoal.

blackstrap. A low grade of cane molasses.

blanc fixe. A precipitated barium sulfate, used in the paint industry and as a filler for textiles, rubber, etc.

blanching. Brief exposure of food to hot water or steam before canning.

blancometer. Device for comparing whiteness of surfaces.

blast furnace. Hot air heated, ore-reducing metallurgical furnace.

blasting gelatin. Nitroglycerin to which has been added about 8% nitrocellulose.

blasting powder. A mixture of variable amounts of potassium nitrate, sulfur, and charcoal, a slow-acting explosive which burns rapidly but does not detonate.

blastomyces. Genus of fungi reproducing by budding.

blau gas. See oil gas.

bleachers' assistants. General name for compounds employed in boiling-out of cotton in the kier, e.g. mixtures of alkalies.

bleaching. The destruction of the color of a product involving no impairment of the product and as white an appearance as possible.

bleaching powder. See calcium chlorohypochlorite.

bleeding. In the coloring of rubber, term applied to the staining of a liquid, usually water or a water-soap solution in which the colored rubber is immersed; in paints, the staining of the outer coat of paint by the dissolving into it of the dye of the undercoat.

blight (wilt). Plant disease wherein ends of branches or entire plant wilt or die rather suddenly without falling of leaves.

blister copper. See copper, blister.

blister steel. Raw cementation process steel.

blocking layer. Surface of contact between a conductor and semiconductor acting as a rectifier; when illuminated it generates a photovoltaic e.m.f.

block tin. A refined tin of second or ordinary quality.

bloedite (blödite). A mineral; $MgSO_4 \cdot Na_2SO_4 \cdot 4H_2O$; monocl., col. to grnsh., yelsh. or red; sp.gr. 2.22-2.28; hardness 2.5; see also magnesium sodium sulfate.

blood albumin. See albumin, blood.

blood, dried. A brown powder obtained from the packing house; used as a fertilizer, and as an ingredient in patent medicines.

bloodstone. A mineral variety of chalcedony, SiO_2, showing bright red spots on a dark green background. This term is also applied to a hard variety of hematite, Fe_2O_3.

bloom. Fluorescence (in oils).

blooming. Light colored layer formed on surfaces by migration of sub-surface substances on aging.

blow-case. See acid egg.

blow-pipe. A device for intensifying the heat of a flame by blowing air into it.

blown oil. See oil, blown.

blubber oil. See oil, whale.

blue asbestos. See crocidolite.

blue copperas. See copper sulfate.

blue cross. See arsine, chlorodiphenyl-.

blue iron ore. See vivianite.

blue malachite. See azurite.

blue ointment. A mercurial ointment containing not less than 29% and not more than 31% of mercury.

blue stain. Fungus growth on raw lumber.

blue stone. See chalcanthite.

blue vitriol. See chalcantite and copper sulfate.

bluing, laundry. Substances used in washing to give the material a bluish tint. This neutralizes the yellow tint, producing a purer white shade.

blushing. Clouding or whitening of lacquer coating because of too rapid drying or high humidity.

board-foot. Unit of timber measurement. A piece of timber 1 foot square and 1 inch thick.

Board of Trade Unit (B.T.U.). British commercial unit of electricity; 1000 watt hours, or 1 kilowatt hour.

bobbin. Spool upon which yarn is wound.

bobierite. See magnesium phosphate, ortho-.

bodied oil. See oil, bodied.

body-centered (space-centered). In x-ray crystal study, one of the types of atomic configuration in a crystal lattice; having an atom in its figure center.

Boea gum. See gum, Boea.

boghead coal. A variety of bituminous or subbituminous coal resembling cannel coal (q.v.) in appearance and combustion; it contains a high percentage of algal remains and gives exceptionally high yields of tar and oil upon distillation.

Bohr-Grotrian diagram. Diagrammatic representation of an atom's energy levels.

boil-off. Removal of size from woven fabric; cleaning or scouring process prior to dyeing; process of hot washing of textiles.

boiled oil. See oil, boiled.

boiler feed water. Water used by boiler to form steam for heat or power.

boiler scale. Incrustation in boilers due to mineral content of water used therein.

boiling-off (stripping; degumming). Process of removal of grease, dirt and other extraneous matter from silk.

boiling out. Process of removal of grease, dirt and other extraneous matter from cotton.

boiling point. The highest temperature that can be reached by a liquid, under a given pressure of its own vapor, when heat is applied externally and evaporation occurs freely from the surface; the temperature at which the vapor pressure of the liquid is equal to the pressure of the atmosphere.

boiling point elevation, molecular. The rise in boiling point produced by one gram-molecule of dissolved substance in one kilogram of solvent (equal to 0.52° C. when water is the solvent). This value obtains only for undissociated solutes, aberrant results giving a measure of ionization.

boiling point-gravity number. Measure of naphthenic or paraffinic nature of petroleum.

bois de rose. See linaloe oil.

bold (sorts). Designation of large pieces of gums or resins free from dust, dirt and small pieces.

bole. See iron oxide.

Bolley's green. A dehydrated copper borate used as a pigment.

bolometer. Electrical device for measuring extremely minute quantities of heat.

bolting. Separation of particles of different sizes by means of vibrating sieves.

Boltzmann constant. Ratio of molar ideal gas constant to Avogadro number.

Boltzmann engine. Ideal thermodynamic device, working in cycles and having imprisoned radiation corresponding to a working substance.

Boltzmann entropy hypothesis. The entropy of a system of material particles is proportional to the logarithm of the statistical probability of the distribution.

Boltzmann factor. Correction for thermal excitation in calculation of spectral line intensities.

bolus alba. See clay.

bond, dative. See semi-polar bond.

bond force constant. Hooke's law-force constant for infinitesimal extension or compression of a chemical molecular bond.

bond, mixed double (semi-polar double bond). A combination of one electrovalency and one covalency.

bond moment (binding moment). Dipole moment of a chemical bond in a polar molecule.

bond, semi-polar. See semi-polar bond.

bond, semi-polar double. See bond, mixed double.

bonderizing. Process of providing chemical primer bases for decorative or protective finishes on metal.

bonding power. Measure of effect, either positive or negative, contributed by a shared electron in a molecule toward the attraction or repulsion between its atoms.

bonding strength. Amount of adhesion between a binder and filler; specifically applied to measure of extent to which composite layers of a laminated product are bound together.

bone ash. An ash obtained by calcining bones in air, used as a fertilizer and in polishing compounds.

bone black. A black pigment made by calcining bones without access of air; sp.gr. 2.7; decolorizing agent, filtering and absorptive medium; deodorizing agents; paint and varnish pigment.

bone char. See animal charcoal.

bone gelatin. Gelatin made from clean bones of heads and feet.

bone meal. A powder produced by drying and grinding bones; used as a fertilizer.

bone oil. See oil, bone.

booster. Generator or transformer for adding or subtracting voltage in a circuit.

boracic acid. See boric acid, ortho-.

boracite (stassfurtite). A mineral; $2Mg_3B_8O_{15} \cdot MgCl_2$; rhomb., wh., gray, yel. or grn.; sp.gr. 2.9-3.0; hardness 7.

borate. Salt of boric acid, H_3BO_3. No salts of composition such as Na_3BO_3 are known, but other degrees of hydration are found in *meta*borates and *tetra*borates (q.v.).

borax (tincal). A mineral, sodium tetraborate, $Na_2B_4O_7 \cdot 10H_2O$; monocl., wh., grayish; blsh. or grnsh.; sp.gr. 1.69-1.72; hardness 2.0-2.5.

borax glass. Fused anhydrous borax; used as metal flux.

Bordeaux mixture. A fungicide and insecticide consisting of slaked lime, copper sulfate, and water.

boric acid (sassolite). $B_2O_3 \cdot 3H_2O$; m.w. 123.69; tricl.; s.g. 1.49; d. on heating.

boric acid, benzyl- (benzylboron dihydroxide). $C_6H_5CH_2B(OH)_2$; m.w. 135.89; cr.; m.p. 161.

boric acid, p-bromophenyl-. $BrC_6H_4B(OH)_2$; m.w. 200.78; need.; m.p. 266.

boric acid, p-chlorophenyl-. $ClC_6H_4B(OH)_2$; m.w. 156.32; need. or sheafs; m.p. 275.

boric acid, ethyl-. $C_2H_5B(OH)_2$; m.w. 73.87; wh. cr.; s.w.; s.al.

boric acid, fluo- (hydrofluoboric-). HBF_4; m.w. 87.83; col. liq.; s.w.; s.al.

boric acid, isoamyl-. $(CH_3)_2CHCH_2CH_2B(OH)_2$; m.w. 115.92; rectangular tab.; m.p. 169; s.w.; s.al.

boric acid, isobutyl-. $(CH_3)_2CHCH_2B(OH)_2$; m.w. 101.91; long pointed doubly refracting pl.; m.p. 112; s.w.; s.al.

boric acid, ortho- (boracic acid). H_3BO_3; m.w. 61.84; tricl. col.; s.g. 1.435 ^{15}; b.p. $-1\frac{1}{2}H_2O$ 300; s.w.

boric acid, phenyl- (phenylboron dihydroxide). $C_6H_5B(OH)_2$; m.w. 121.87; need.; m.p. 216; s.w.; s.al.

boric acid, propyl-. $CH_3CH_2CH_2B(OH)_2$; m.w. 87.89; thick rectangular pl.; m.p. 107; s.w.; s.al.

boric acid, pyro-. $B_4O_5(OH)_2$; m.w. 157.30; vitr. or wh. powd.; s.al.

boric acid, p-tolyl- (p-tolylboron dihydroxide). $CH_3C_6H_4B(OH)_2$; m.w. 135.89; need.; m.p. 240.

boric anhydride. See boron oxide.

borine, difluorophenyl- (boron phenyl difluoride; phenylboron difluoride). $C_6H_5BF_2$; m.w. 125.86; oil; b.p. 70-5.

borine, difluoro-p-tolyl- (p-tolylboron difluoride; boron p-tolyl difluoride). $CH_3C_6H_4BF_2$; m.w. 139.87; oil.; b.p. 95-7.

borine, triethyl- (triethylboron; boron triethyl). $(C_2H_5)_3B$; m.w. 97.94; col. fum. liq.; b.p. 95; s.w.; s.al.

borine, triisoamyl- (triisoamylboron). $(C_5H_{11})_3B$; m.w. 224.08; liq.; b.p. 119 ^{14}.

borine, triisobutyl- (triisobutyl boron). $(C_4H_9)_3B$; m.w. 182.03; liq.; b.p. 188.

borine, trimethyl- (trimethylboron; boron trimethyl). $(CH_3)_3B$; m.w. 55.89; col. gas; m.p. -161.5; b.p. -20; s.w.; s.al.

borine, triphenyl- (triphenylboron; boron triphenyl). $(C_6H_5)_3B$; m.w. 241.94; hex. columns; d. in air; m.p. 136; b.p. 245-50.

borine, tripropyl- (tripropylboron). $(C_3H_7)_3B$; m.w. 139.98; liq.; b.p. 156.

Borneo camphor. See d-borneol.

Borneo tallow. A mixture of fats derived from the kernels of a large variety of plants; used in the manufacture of candles.

d-borneol (d-exo-2-camphanol; d-bornyl alcohol; Borneo camphor; Malay camphor; Sumatra camphor; d-a-camphol). $C_{10}H_{17}OH$; m.w. 154.14; col. hex. leaf.; m.p. 208; s.w.; s.al.

dl-borneol (dl-exo-2-camphanol; dl-bornyl alcohol; dl-a-camphol). $C_{10}H_{17}OH$; m.w. 154.14; col. hex. leaf. f.lgr.; m.p. 210.5; s.w.; s.al.

l-borneol (l-exo-2-camphanol; ngai camphor). $C_{10}H_{17}OH$; m.w. 154.14; col. hex. pl.; m.p. 208.6; s.w.; s.al.

d-borneol, acetate. $CH_3COOC_{10}H_{17}$; m.w. 196.16; col. rhomb.; liq.; m.p. 29; b.p. 223-4; s.w.; s.al.

dl-borneol, acetate (dl-bornyl acetate). $C_{10}H_{17}OOCCH_3$; m.w. 196.16; col.; m.p. 27-8; b.p. 114 ^{22}.

l-borneol, acetate (l-bornyl acetate). $C_{10}H_{17}OOCCH_3$; m.w. 196.16; col.; m.p. 29; b.p. 223-4.

bornite (purple copper ore; erubescite). A mineral; $FeS \cdot 2Cu_2S$; CuS; cub., dk. redsh. br., tarn. blue, purp. or iridesc.; sp.gr. 4.9-5.4; hardness 3; important as a copper ore.

bornyl acetate. See borneol, acetate.

bornyl alcohol. See borneol.

bornylamine. $C_{10}H_{17}NH_2$; m.w. 153.16; col. cr.; m.p. 163; s.w.; s.al.

bornyl chloride (2-chlorocamphane [one form]; pinene hydrochloride; artificial camphor). $C_{10}H_{17}Cl$; m.w. 172.59; col. cr.; m.p. 131-2; b.p. 207.4; i.w.; s.al.

bornyl chloride. See also isobornyl chloride.

l-bornylene (l-1, 7, 7-trimethylbicyclo [2, 2, 1]-2-heptene). $C_{10}H_{16}$; m.w. 136.12; col. cr. f. me. al.; m.p. 113; b.p. 146 ^{760}; i.w.; s.al.

bornyl esters. See under borneol.

boro butane. See boron hydride.

boroform. See acetylene tetrachloride.

boro ethane. See boron hydride.

boroglyceride. Salt of boric acid and glycerine.

Borolon. Alumina, Al_2O_3, prepared by fusing bauxite and used as an abrasive and refractory.

boron. B; m.w. 10.82; monocl. yel. or br. amor. powd.; s.g. 2.3, 1.73 (am.); m.p. 2300; b.p. 2550; i.w.; i.al.; a non-metallic element, found in combination in boric acid, native borax or tincal, boracite, and other minerals; obtained by reduction of the trioxide with magnesium; of no commercial value.

boron ammonium fluoride. $B(NH_4)F_4$; m.w. 104.86; col. hex.; s.g. 1.85; s.w.; s.al.

boron bromide. BBr_3; m.w. 250.57; col. fum. liq.; s.g. 2.650; m.p. -46; b.p. 90.1 ^{740}; s.al.

boron bromodiiodide. $BBrI_2$; m.w. 344.58; col. liq.; b.p. 180.

boron bromohydride. B_2H_5Br; m.w. 106.60; col. gas; m.p. -104; b.p. *ca.* 10.

boron bromoiodide, di-. BBr_2I; m.w. 297.57; col. liq.; b.p. 125.

boron carbide. B_6C; m.w. 76.92; blk. cr.; s.g. 2.6; m.p. 2350; b.p. >3500; i.w.; an extremely hard substance, ranking next to the diamond in hardness.

boron chloride. BCl_3; m.w. 117.19; col. fum. liq.; s.g. 1.434°; m.p. -107; b.p. 12.5.

boron fluoride. BF_3; m.w. 67.82; col. gas; d. 2.99 g/l; m.p. -127; b.p. -101; s.w.

boron fluoride, di-, phenyl-. See borine, difluorophenyl-.

boron fluoride, di-, p-tolyl-. See borine, difluoro-p-tolyl-.

boron hydride (boroethane). B_2H_6; m.w. 27.69; col. gas; s.g. lq. 0.45; m.p. -169; b.p. -92.5.

boron, hydride (borobutane). B_4H_{10}; m.w. 53.36; col. pois. gas; s.g. liq. 0.59^{-70}; m.p. -120; b.p. 17.6.

boron hydride. $B_{10}H_{14}$; m.w. 122.31.; col. need.; s.g. 0.94; m.p. 99.5; b.p. 156 $^{162.4}$; s.w.; s.al.

boron hydroxide, di-, benzyl-. See boric acid, benzyl-.

boron hydroxide, di-, phenyl-. See boric acid, phenyl-.

boron hydroxide, di-, p-tolyl-. See boric acid, p-tolyl-.

boron iodide. BI_3; m.w. 391.58; col. pl. hyg.; s.g. 3.35 ^{50}; m.p. 43; b.p. 210.

boron nitride. BN; m.w. 24.83; amor. wh.; s.g. 2.25; m.p. *ca.* 2730; i.w.

boron nitride. BN_2; m.w. 38.84; b.p. 1230 $^{9.4}$.

boron oxide (boric anhydride). B_2O_3; m.w. 69.64; vitr. col.; s.g. 1.844; *ca.* 577; s.w.; s.al.

boron phosphide. BP; m.w. 41.84; maroon powd.; i.w.; i.al.

boron potassium fluoride. BKF_4; m.w. 125.92; col. cub. or rhomb.; s.g. 2.56; m.p. 530; s.al.

boron sulfide, penta-. B_2S_5 (exist. quest.); m.w. 181.94; wh. cr.; s.g. 1.85; m.p. 390.

boron sulfide, tri-. B_2S_3; m.w. 117.82; wh. cr. or vitr.; s.g. 1.55; m.p. 310°

boron, triethoxy-. See ethyl borate.

boron, triethyl-. See borine, triethyl-.

boron, triisoamyl-. See borine, triisoamyl-.

boron, triisobutyl-. See borine, triisobutyl-.

boron, trimethoxy-. $B(OCH_3)_3$; m.w. 103.89; liq.; s.g. 0.915; b.p. 65; see also methyl borate.

boron, trimethyl-. See borine, trimethyl-.

boron, triphenyl-. See borine, triphenyl-.

boron, tripropoxy-. See propyl borate.

boron, tripropyl-. See borine, tripropyl-.

borotungstic acid. $B_2O_3(WO_3)_9 \cdot 24H_2O$; m.w. 2590.01; yelsh. liq.; s.g. 3.0; s.w.

bort. See carbonado.

bortz. See diamond.

Bosanquet law (Rowland law). Magnetic flux, in maxwells, in a magnetic circuit, equals the magnetomotive force, in gilberts, divided by magnetic reluctance in oersteds.

Bosch process. A method of recovering hydrogen from water gas. The carbon monoxide is reacted with steam at 500° C. in the presence of catalysts to form carbon dioxide and hydrogen.

Bosch bakelite. Synthetic tar-acid resin.

Bose-Einstein statistics. Statistical analysis of distribution of gas molecules or radiation quanta and their moments.

bottoms. Residue left from distillation of oils.

botulism. Toxemia resulting from eating food in which Clostridium botulinum has grown and formed its poison.

Bouguer formula. Formula for variation of gravitational force with altitude.

Bougie decimale (International Candle). Measure of intensity of source of light; 1 International Candle.

boulangerite. A mineral, $3PbS \cdot Sb_2S_3$.

bound water. Water contained in a substance, in the lowest concentration that is in equilibrium with saturated air, present in hygroscopic materials; water strongly held on the surface of colloidal particles.

Bourbonal. Ethyl vanillin.

bournonite (wheel ore). A mineral; $PbCuSbS_3$; rhomb., st. gray to iron blk.; sp.gr. 5.7-5.9; hardness 2.5-3.0.

boussingaultite. See magnesium ammonium sulfate.

Boyle-Marriotte's law. Product of pressure and volume, at a given temperature, is constant for a given mass of gas.

Boyle point. For each gas that temperature at which it conforms exactly to the laws of Boyle and Avogadro.

Boyle's law. The volume of a gas is inversely proportional to the pressure at a given temperature; the product of pressure and volume at a given temperature is constant.

Bozetol. A sulfonated derivative of castor oil used as a wetting agent in the textile industry.

brachistochrone (brachystochrone). Path of constraint along which a particle, acted on by a given force, moves from one given point to another in the shortest time.

Brackett series. Spectral series in infra-red region of hydrogen spectrum having frequencies of certain multiples.

Bragg angle. Glancing angle of x-rays at reflecting planes of a crystal.

Bragg law. Equation for condition whereby a system of parallel atomic layers in a crystal reflects a beam of x-rays with greatest intensity.

Bragg reflection. Strengthened reflection of x-rays from successive atomic planes of a crystal, or of electrons from the grating-like surface structure.

brake horse-power (B.H.P.). Available power developed by a motor, engine, etc.

branching ratio. Ratio between numbers of atoms of a radioactive element which undergo two different kinds of change, one emitting an alpha and the other a beta particle.

brasilein. See brazilein.

brasilin. See brazilin.

brasque. Protective refractory lining of crucibles and furnaces.

brass. A copper-zinc alloy of varying proportions.

brass, alpha. Brass consisting entirely of a solid solution of zinc in copper (not more than 30-36% zinc).

brassidic acid, brassic acid (trans-13-docosenoic acid; isoerucic acid; trans-erucic acid). $C_8H_{17}CH{:}CHC_{11}H_{22}COOH$; m.w. 338.33; col. leaf. f.al.; m.p. 61.5; b.p. 282 ^{30}; s.w.; s.al.

brassidic anhydride. $(C_{21}H_{41}CO)_2O$; m.w. 658.64; need.; m.p. 64; i.w.; s.al.

brassic acid. See brassidic acid.

braunite. See manganese oxide(ic).

Bravais-Miller index. One of four numbers (h, k, f, l) indicating any set of parallel planes in a crystal of the hexagonal system.

Brazil wax. See wax, carnauba.

Brazil wood. See hypernic.

Brazil wood extract. A natural dyestuff used to dye wool yellow.

brazilein (brasilein). $C_{16}H_{12}O_5$; m.w. 284.09; dk. red rhomb. leaf.; s.w. s.al.

brazilin (brasilin). $C_{16}H_{14}O_5 \cdot 1\frac{1}{2}H_2O$; m.w. 313.13; wh. or pa. yel. rhomb. need. f.al.; m.p. 250; s.w.; s.al.

brea. Sand or soil impregnated with petroleum and used as a road dressing.

break. Flocculent material which separates from oils on standing or treatment.

break-down. Process of softening crude rubber by milling or extrusion.

breakdown voltage. See voltage, breakdown.

breaking. Separation of an emulsion into two or more of its components.

breaking load. For a specimen of any material, the maximum load developed in a tension test carried to the point of rupture.

breaking stress. See tensile strength.

breccia. Non-rounded pieces of rock cemented into solid rock by deposition of mineral matter around and among them.

Bremen blue. See copper carbonate blue.

Bremen green. See copper carbonate blue.

Brewster's law. Tangent of the polarizing angle for a substance is equal to the index of refraction.

brick. Building material made by molding and baking clay or marl.

bright stock. Heavy viscous residual oil of clear pale or red color; a heavy petroleum distillate.

brightness. Quotient of luminous intensity of a surface, in any direction, by the area of the surface projected on a plane perpendicular to this direction, measured by the flux emitted per unit emissive area as projected on a plane normal to the line of sight.

brilliance. The percentage of incident light reflected by an object, in the case of a white object approaching 100% in brilliance.

brilliancy, intrinsic. Luminosity in candle power per square inch or square centimeter.

brilliant lake. Concentrated red organic color with light overtone and blue undertone.

Brillouin effect (Debye-Sears effect). Pair of spectral satellites in radiation scattered by liquids, one on each side of the unmodified line at an interval of about 0.04 Å.

Brillouin zone. Continuous ensemble of all energies and wave functions obtained from one atomic energy level in a metallic-crystal lattice.

brimstone. See sulfur.

Brin's process. Production of oxygen from air by the reversible decomposition of barium peroxide. Air under pressure is passed over heated barium oxide to form the peroxide, and the combined oxygen is released by reduction of pressure.

Brinnell' test. Measure of hardness of metals obtained by forcing a hardened steel ball, under a given pressure against the metal.

briquette. A block of solid material made by subjecting the raw material to heavy pressure with or without a binder.

British gum. See dextrin.

British Thermal Unit (B.T.U.). Mechanical equivalent of heat; amount of heat necessary to raise 1 lb of water 1° F; equal to 778.3 foot-lb.

Britsulite. Synthetic tar-acid resin f

olding and laminating.
tania metal. An alloy of tin (85-90), opper (1-3), and antimony (5-10); hite; non-corroding; used for cheap ableware.
tleness. Liability to break.
r. Scale representing percentage of olids in sucrose solutions.
chantite. A mineral; $CuSO_4 \cdot Cu(OH)_2$; rhomb., emer. to blksh. rn.; sp.gr. 3.8-3.9; hardness 3.5-4.0; .w.
enner's acid. See 2-naphthylamine-6-sulfonic acid.
ggerite. A variety of uraninite (q.v.) containing thorium.
macetol. See propane, 2, 2-dibromo-.
mal (2, 2, 2-tribromoethanal; tribromoacetaldehyde; tribromoaldehyde). CBr_3CHO; m.w. 280.76; yel. liq.; b.p. 174; s.al.
mal, hydrate (2, 2, 2-tribromo-1, 1-ethanediol; tribromoethylidene glycol). $CBr_3CH(OH)_2$; m.w. 298.77; col. monocl. pr.; m.p. 53.5; s.w.; s.al.
romanilid. See acetanilide, p-bromo-.
romargyrite. A natural silver bromide, AgBr.
romelia. See ether, ethyl 2-naphthyl.
romellite. See beryllium oxide.
romic acid. $HBrO_3$; m.w. 128.92; soln. only, col. or yel.; s.w.
romide. Salt of hydrobromic acid, e.g. potassium bromide, KBr.
romination. Process of introducing bromine into an organic compound.
romine. Br; at. wt. 79.916; at. no. 35; rhomb. or dk. red liq.; s.g. 2.928 ^{20}; m.p. −7.3; b.p. 58.78; a nonmetallic element; a liquid volatilizing readily at room temperatures to a brown irritating vapor; a member of the halogen series less active than chlorine, but more so than iodine; soluble in water and carbon disulfide; chemically reactive and having bleaching action; used to prepare coal tar derivatives, and compounds useful in photography and medicine.
bromine azide (bromoazide). BrN_3; m.w. 121.94; or. red liq.; m.p. *ca.* 45.
bromine chloride. BrCl (exist. quest.); m.w. 115.37; red.-yel. liq. or gas.
bromine cyanide. See cyanogen bromide.
bromine fluoride, penta-. BrF_5; m.w. 174.92; col. liq.; s.g. 2.466 ^{25}; m.p. −61.3; b.p. 40.5.
bromine fluoride, tri-. BrF_3; m.w. 136.92; col.-gray yel. liq.; s.g. 2.49 ^{125}; m.p. 8.8; b.p. 135.
bromine hydrate. $Br_2 \cdot 10H_2O$; m.w. 339.99; oct. red.; s.w.
bromine iodide. BrI; m.w. 206.84; dk. gray cryst.; s.g. 4.416°.
bromine number. See bromine value.
bromine sulfide. Br_2S_2; m.w. 223.95; red.; s.g. 2.629; liq.; b.p. 190-200.
bromine value (bromine number). Number of centigrams of bromine which are absorbed by 1 g. of oil under certain conditions.
Bromo acid. Tetrabromfluorescein color used in lipsticks.
bromoanilid. See acetanilid, p-bromo-.
bromoauric acid. See auric acid, bromo-.
bromo azide. See bromine azide.
bromoform (tribromomethane). $CHBr_3$; m.w. 252.76; col. liq. or hex. cr.; m.p. 6-7; b.p. 149.5; s.w.; s.al.
bromoform, nitro-. See bromopicrin.
bromopicrin (tribromonitromethane; nitrobromoform). NO_2CBr_3; m.w. 297.76; d. 2.811 $^{12.5}_{4}$; m.p. 10; b.p. 127 ^{118}; i.w., s.al.
bromous acid, hypo-. HBrO; m.w. 96.92; col.; m.p. 40 vac.; s.w.
2-bromparaxenol. See biphenyl, 3-bromo-4-hydroxy-.
bronyrite. A mineral; AgBr; cub., yel. to grn. or gray; sp.gr. 3.8-3.9; hardness 2-3.
Brönner's acid. See 2-naphthylamine-6-sulfonic acid.
Bronson resistance. High resistance made of two electrodes in a constantly ionized gas.
bronze. Alloy of copper and tin.
bronze, aluminum. See aluminum bronze.
bronze, casting. Bronze containing 8-11% tin.
bronze powder. A powdered alloy of copper, zinc, tin, and other metals, used for japanning and other decorative applications.
bronze, wrought. Bronze containing 4-8% tin.
bronzite. An iron-containing enstatite (q.v.).
brookite. A mineral; TiO_2; rhomb., br. yelsh., redsh. to iron blk.; sp.gr. 3.87-4.084; hardness 5.5-6.0.
broth culture. See culture, broth.
brown acetate. Crude calcium acetate.
brown coal. See lignite.
brown hematite. See limonite.
brown iron ore. See limonite.
brown ironstone clay. See limonite.
Brownian movement. Continuous irregular motion exhibited by particles suspended in a liquid or gaseous medium usually as a colloidal dispersion and due to the thermal agitation of the molecules of the medium.
brucine. $C_{23}H_{26}N_2O_4 \cdot 4H_2O$; m.w. 466.28; monocl. pr.f.al.; m.p. $4H_2O$ 105, anh. 178; s.w.; s.al.
brucine, hydrochloride. $C_{23}H_{26}N_2O_4 \cdot HCl$; m.w. 430.68; wh. need.; s.w.; s.al.
brucine, nitrate. $C_{23}H_{26}N_2O_4 \cdot HNO_3 \cdot 2H_2O$; m.w. 493.27; wh. pr.; s.w.; s.al.
brucine, sulfate. $(C_{23}H_{26}N_2O_4)_2 \cdot H_2SO_4 + 7H_2O$; m.w. 1012.62; lng. need.; s.w.; s.al.
brucite. A mineral; $MgO \cdot H_2O$; trig., wh., gray, blue or grn.; sp.gr. 2.38-2.4; hardness 2.5; see also magnesium hydroxide.
Brunswick black. A mixture of asphalt and linseed oil heated together, to which, on cooling, turpentine is added.
Brunswick green. A pigment formerly consisting of an oxychloride of copper, now usually a mixture of Prussian blue and chrome yellow with or without barytes.
brush discharge. Electrical discharge, between two bodies separated by a distance too great to allow a continuous spark, consisting of minute forked discharges which cause a luminous glow.
brushite. See calcium phosphate, pyro-.
bubbler. A device for obtaining efficient contact between gases and liquids. The liquid flows over the surface of a perforated plate while the gas flows through the perforations.
Büchner funnel. A type of filter designed for the filtration of bulky precipitates.
buchu. The dried leaves of a South African plant, used in medicine.
Buckley gauge. Ionization gauge for measuring minute pressures.
budding (gemmation). Process of reproduction in some lower plants and animals (e.g. yeast) whereby buds or shoots form and then become detached to form separate organisms.
buff. Polishing wheel usually consisting of large number of treated or untreated muslin discs.
buffer. A substance or mixture of substances which in solution acts to maintain a constant hydrogen ion concentration despite addition of comparatively large amounts of acid or alkali.
buffer index. The increment of acid or base required to produce respectively a unit decrement or increment in the pH value of a solution.
buffing. Polishing of metals.
builder. Any material added to soap to augment its efficiency.
built soap. See soap, built.
bulbocapnine. $C_{19}H_{19}NO_4$; m.w. 325.16; rhomb. pr.f.et.; m.p. 199; i.w.; s.al.
bulk factor. The ratio of the volume of any given quantity of loose molding powder to the volume of the same material after molding.
bulk modulus. Relationship of applied stress and volumetric strain produced when a stress is applied uniformly to all sides of a body; pressure modulus.
bulking agent. Chemically inert materials for increasing volume of a composition, e.g. clay; filler.
bulking value. Volume of one pound of a solid or liquid incorporated in a composition.
Bullard-Dunn process. Process for removal of scale from steel by cathodic treatment in an alkaline bath containing tin or lead.
Buna. Synthetic rubber of alternative or co-rubber type.
Bunsen burner. A type of burner in which the amount of air to be mixed with the gas before burning can be regulated mechanically.
Bunsen coefficient. The solubility of a gas in a liquid at normal temperature and pressure in terms of volume of gas absorbed per unit volume of solution.
bunsenite. A mineral; NiO; cub., grn.; sp.gr. 6.398; hardness 5.5.
burette. Cylindrical graduated glass tube having a stop cock or pinch clamp at its lower end, generally used in titrations and in the measurement of small delivered volumes of liquid.
Burgundy lake. A red pigment lake; composed of 17½% organic color, 21% aluminum hydrate, 61% blanc fixe.
Burgundy pitch. See pitch, Burgundy.
burnt alum. See aluminium ammonium sulfate (hydrated).
burnt lime. See calcium oxide.
burnt sugar coloring. See caramel.
Burow's solution. A solution of aluminum acetate, 4.8-5.8 gms. per 100 cc.; sp.gr. 1.022; markedly astringent and distinctly antiseptic; used for local medical applications.
burst. Instantaneous intense ionization (due to cosmic rays) often immediately producing large numbers of ion pairs.
bus bar. Common feeder; strip of copper on switch and panel board from which current is tapped.
bushelling. Heating of iron or steel scrap in a reverberatory furnace.
bushing. Bearing sleeve or lining permitting ready repair and adjustment. Plug that is threaded into end of a pipe.
busy metal. Metal which is repeatedly subjected to cold rolling, vibration or abrasion in service.
1, 2-butadiene (methylallene). $CH_2{:}C{:}CHCH_3$; m.w. 54.05; col. liq.; b.p. 19; i.w.; s.al.
1, 3-butadiene (bivinyl; erythrene; pyrrolylene; vinylethylene; divinyl; biethylene). $CH_2{:}CHCH{:}CH_2$; m.w. 54.05; gas.; m.p. −5 ^{713}; b.p. −3; i.w.; s.al.
1, 3-butadiene, 2, 3-dimethyl- (biisopropenyl). $CH_2{:}C(CH_3)C(CH_3){:}CH_2$; m.w. 82.08; col. liq.; m.p. −65; b.p. 69.6.
1, 3-butadiene, 2-chloro-. See chloroprene.
1, 3-butadiene, 2-methyl-. See isoprene.
butadiine. See butadiyne.
butadiyne (butadiine; biacetylene). $CH{:}CC{:}CH$; m.w. 50.02; gas; m.p. −36.4; b.p. 10.3; s.w.; s.al.
Butalyde. Normal butyraldehyde.
butanal. See butyraldehyde and corresponding derivatives.
butanal, 3-hydroxy-. See aldol.
butanamide. See butyramide.
butanamide, 2-bromo-3-oxo-N-phenyl-. See acetoacetanilide, α-bromo-.
butane (n-butane; methylethylmethane). $CH_3(CH_2)_2CH_3$; m.w. 58.08; col. gas or hex.; m.p. −135; b.p. −0.6 to −0.3; s.w.; s.al.
butane, amino-. See butylamine.
butane, 1-amino-3-methyl-. See isoamylamine.
1-butanearsonic acid (n-butylarsonic acid). $CH_3(CH_2)_3AsO(OH)_2$; m.w. 182.02; m.p. 158-9; s.w.; s.al.
butane, 1-benzyloxy-. See ether, benzyl butyl.
butane, 2, 2-bis (ethylsulfonyl)-. See trional.
butane, 1-bromo-. See butyl bromide (n).
butane, 2-bromo-. See sec-butyl bromide.
butane, 1-bromo-2-methyl- (d) (d-pri-act-amyl bromide). $CH_3CH_2CH(CH_3)CH_2Br$; m.w. 151.00; liq.; b.p. 120-1; i.w.; s.al.
butane, 1-bromo-3-methyl-. See isoamyl bromide.
butane, 1-butoxy-. See butyl ether(n).
butane, 1-butyldithio-. See butyl disulfide(n).
butane, butylthio-. See butyl sulfide(n).
butane, 1-chloro-. See butyl chloride(n).
butane, 2-chloro-. See sec-butyl chloride.
butane, 1-chloro-2-methyl- (pri-act-amyl chloride). $CH_3CH_2CH(CH_3)CH_2Cl$; m.w. 106.54; liq.; b.p. 97-9; i.w.; s.al.
butane, 1-chloro-3-methyl-. See isoamyl chloride.
butane, 2-chloro-2-methyl- (tert-amyl chloride). $CH_3CH_2CCl(CH_3)CH_3$; m.w. 106.54; liq.; m.p. −73; b.p. 86; i.w.; s.al.
butanedial. See succinaldehyde.
butanediamide. See succinamide.
butanediamide, 2-hydroxy-. See malamide.
1, 4-butanediamine. See putrescine.
1, 1-butanedicarboxylic acid. See malonic acid, propyl-.
1, 2-butanedicarboxylic acid. See succinic acid, ethyl-.
1, 4-butanedicarboxylic acid. See adipic acid.
2, 3-butanedicarboxylic acid, 2, 3-dimethyl-. See succinic acid, tetramethyl-.
butane, 2, 3-dichlor-. $CH_3 \cdot CHCl \cdot CHCl\ CH_3$; m.w. 126.96; sp.gr. 1.11; b.p. 118.0; used in organic synthesis.
butane, 1, 2, 3, 4-diepoxy-. See i-erythritol, anhydride.
butane, 1, 4-dihydroxy-. See 1, 4-butanediol.
butane, 2, 2-dimethyl- (ethyltrimethylmethane; neohexane). $(CH_3)_3CCH_3$; m.w. 86.11; liq.; m.p. −98.2; b.p. 49.7; i.w.; s.al.
butane, 2, 3-dimethyl- (isopropyldimethylmethane; biisopropyl). $(CH_3)_2CHCH(CH_3)_2$; m.w. 86.11; liq.; m.p. −135.1; b.p. 58.1; i.w.; s.al.
butane dinitrile. See succinonitrile.
butanedioic acid. See succinic acid.
butanedioic anhydride. See succinic anhydride.
1, 2-butanediol (α-butylene glycol; ethylethylene glycol). $CH_3CH_2CH(OH)CH_2OH$; m.w. 90.08; liq.; b.p. 192; s.w.; s.al.
1, 3-butanediol (β-butylene glycol; α-methyltrimethylene glycol). $CH_3CH(OH)CH_2CH_2OH$; m.w. 90.08; visc. liq.; b.p. 204; s.w.; s.al.
1, 4-butanediol (tetramethylene glycol; 1, 4-dihydroxybutane). $CH_2OH(CH_2)_2CH_2OH$; m.w. 90.08; need. or oil.; m.p. 16; b.p. 230; s.w.; s.al.
2, 3-butanediol (pseudobutylene glycol; sym-dimethylethylene glycol). $CH_3CH(OH)CH(OH)CH_3$; m.w. 90.08; liq.; b.p. 184; s.w.; s.al.
1, 2-butanediol, 3-methyl- (isopropylethylene glycol; α-isoamylene glycol). $(CH_3)_2CHCH(OH)CH_2OH$; m.w. 104.29; liq.; b.p. 206; s.al.
2, 3-butanediol, 2, 3-dimethyl-. See pinacol.
2, 3-butanediol, 2, 3-diphenyl- (α, α'-dimethylhydrobenzoin; acetophenone pinacol). $CH_3COH(C_6H_5)COH(C_6H_5)CH_3$; m.w. 242.14; need.; m.p. 121-2; i.w.; s.al.
1, 3-butanediol, 3-methyl- (γ-isoamylene glycol). $(CH_3)_2COHCH_2CH_2OH$; m.w. 104.09; thick syrup; b.p. 202-3; s.w.; s.al.

2, 3-butanediol, 2-methyl- (trimethylethylene glycol; β-isoamylene glycol). $(CH_3)_2C(OH)CH(OH)CH_3$; m.w. 104.09; thick oil; b.p. 177; s.w.; s.al.

1, 1-butanediol, 2, 2, 3-trichloro-. See butyraldehyde, α, α, β-trichloro-, hydrate.

2, 3-butanedione (dimethylglyoxal; biacetyl; dimethyldiketone; diacetyl). liq.; b.p. 88; s.w.; s.al.

2, 3-butanedione, dioxime. See glyoxime, dimethyl-.

2, 3-butanedione, mono-oxime (biacetyl mono-oxime; α-isonitrosoethyl methyl ketone). $CH_3COC(:NOH)CH_3$; m.w. 101.06; pr.f.chl.; leaf. f.w.; m.p. 74-5; b.p. 186; s.w.; s.al.

1, 3-butanedione, 1-phenyl-. See acetone, benzoyl-.

butanedioyl chloride. See succinyl chloride.

butane, 1-ethoxy-. See ether, butyl ethyl.

butane, 1-ethoxy-3-methyl-. See ether, ethyl isoamyl.

butane, 1-iodo-. See butyl iodide.

butane, 2-iodo-. See sec-butyl iodide.

butane, 1-iodo-2-methyl- (pri-act-amyl iodide). $CH_3CH_2CH(CH_3)CH_2I$; m.w. 198.01; liq.; b.p. 148; i.w.; s.al.

butane, 1-iodo-3-methyl-. See isoamyl iodide.

butane, 2-iodo-2-methyl- (tert-amyl iodide). $CH_3CH_2CI(CH_3)CH_3$; m.w. 198.01; liq.; b.p. 125-8; i.w.; s.al.

butane, 1-methoxy-. See ether, butyl methyl.

butane, 2-methyl- (ethyldimethylmethane; isopentane). $(CH_3)_2CH-CH_2CH_3$; m.w. 72.09; col. liq.; m.p. −160.5; b.p. 28; i.w.; s.al.

butane, 3-methyl-1-(γ-methylbutoxy)-. See isoamyl ether.

butane, 2-methyl-1-(β-methylbutylthio)-. See sulfide, bis(β-methylbutyl)-.

butane, 3-methyl-1-(γ-methylbutylthio)-. See isoamyl sulfide.

butane, 3-methyl-1-phenoxy-. See ether, isoamyl phenyl.

butane, 2-methyl-2-phenyl-. See benzene, tert-amyl-.

butane, 3-methyl-1-phenyl-. See benzene, isoamyl-.

butane, 3-methyl-1-(2-propenoxy)- See ether, allyl isoamyl.

butane, (α-methylpropoxy)-. See sec-butyl ether.

butanenitrile. See butyronitrile.

butanenitrile, 2-ethyl-. See butyronitrile.

butanenitrile, 2-methyl-. See butyronitrile, α-methyl-.

butanenitrile, 3-methyl-. See isovaleronitrile.

butane, 1-nitro-. $CH_3CH_2CH_2CH_2NO_2$; m.w. 103.08; liq.; b.p. 151-2; s.w.; s.al.

butane, phenyl-. See benzene, butyl-.

butane, 2, 2, 3, 3-tetramethyl- (tert-butyltrimethylmethane; bi-tert-butyl; hexamethylethane). $CH_3C(CH_3)_2-C(CH_3)_2CH_3$; m.w. 114.14; leaf. f.et.; m.p. 104; b.p. 106.8; i.w.

1, 2, 3, 4-butanetetrol (anti). See i-erythritol.

1-butanethiol (butyl mercaptan). $CH_3-(CH_2)_2CH_2SH$; m.w. 90.14; col. liq.; m.p. −115.9; b.p. 98; s.w.; s.al.

1-butanethiol, 2-methyl- (pri-act-amyl mercaptan). $CH_3CH_2CH(CH_3)CH_2-SH$; m.w. 104.15; liq.; b.p. 119-21.

1-butanethiol, 3-methyl- (isoamyl mercaptan). $(CH_3)_2CH(CH_2)_2SH$; m.w. 104.15; col. liq.; b.p. 119: i.w.; s.al.

2-butanethiol, 2-methyl- (tert-amyl mercaptan). $CH_3CH_2C(CH_3)_2SH$; m.w. 104.15.

1, 2, 3-butanetricarboxylic acid, 1, 2, 3-dimethyl-. See[c] l-camphoronic acid.

butane, 2, 2, 3-trimethyl- (isopropyltrimethylmethane). $CH_3C(CH_3)_2CH-(CH_3)CH_3$; m.w. 100.12; col. liq.; m.p. −25.0; b.p. 80.9; i.w.; s.al.

butanimide. See succinimide.

butanoate. Same as butyrate. See butyric acid and corresponding derivatives.

butanoic acid. See butyric acid and corresponding derivatives.

butanoic acid, 4- or γ-hydroxy-, lactone. See butyrolactone.

butanoic acid, 3-methyl-. See isovaleric acid.

butanoic acid, γ-methyl butyl ester. See butyric acid, isoamyl ester.

butanoic acid, β-methyl propyl ester. See butyric acid, isobutyl ester.

butanoic acid, oxo-. See acetoacetic acid and corresponding derivatives.

butanoic anhydride. See butyric anhydride.

1-butanol. See butyl alcohol(n).

2-butanol. See sec-butyl alcohol.

2-butanol acetate. See acetic acid, sec-butyl ester.

2-butanol, 2, 3-dimethyl- (isopropyldimethylcarbinol). $(CH_3)_2COHCH-(CH_3)_2$; m.w. 102.11; col. liq. w. odor of camphor; m.p. −14; b.p. 120-1; s.w.; s.al.

2-butanol, 3, 3-dimethyl-. See pinacolyl alcohol.

1-butanol, 2-ethyl- (pseudohexyl alcohol). $(C_2H_5)_2CHCH_2OH$; m.w. 102.11; col. liq.; b.p. 148.9; s.w.; s.al.

1-butanol, 2-ethyl-, acetate (β-ethylbutylacetate). $(C_2H_5)_2CHCH_2OOC-CH_3$; m.w. 144.12; m.p. < −100 b.p. 162.4; s.w.

butanolide. See butyrolactone.

1-butanol, 2-methyl- (d) (d-sec-butylcarbinol; d-pri-act- amyl alcohol). $CH_3CH_2CH(CH_3)CH_2OH$; m.w. 88.09; col. liq.; b.p. 128; s.w.; s.al.

1-butanol, 3-methyl-. See isoamyl alcohol.

2-butanol, 2-methyl- (dimethylethylcarbinol; tert-amyl alcohol). $CH_3-CH_2C(CH_3)OHCH_3$; m.w. 88.09; col. liq.; m.p. −11.9; b.p. 101.8; s.w.; s.al.

2-butanol, 3-methyl- (methylisopropylcarbinol; sec-isoamyl alcohol). $(CH_3)_2CHCHOHCH_3$; m.w. 88.09; col. liq.; b.p. 114; s.w.; s.al.

1-butanol, 3-methyl-, acetate. See acetic acid, isoamyl ester.

1-butanol, 3-methyl-1-phenyl- (isobutylphenyl carbinol). $(CH_3)_2CHCH_2-CHOHC_6H_5$; m.w. 164.12; thick oil; b.p. 235-6 [746]; i.w.; s.al.

2-butanol, 2, 3, 3-trimethyl- (tert-butyldimethylcarbinol; pentamethylethyl alcohol). $(CH_3)_3CC(CH_3)_2OH$; m.w. 116.12; col. liq.; $+1H_2O$ need.; m.p. 17; b.p. 131-2; i.w.; s.al.

2-butanone (ethyl methyl ketone). $CH_3-COC_2H_5$; m.w. 72.06; col. liq.; m.p. −86.4; b.p. 79.6; s.w.; s.al.

2-butanone, 3, 3-dimethyl-. See pinacolin.

2-butanone, 3, 3-diphenyl- (acetophenone pinacolin). $CH_3COC(C_6H_5)_2-CH_3$; m.w. 224.12; pr.; m.p. 41-1.5; b.p. 310-1; i.w.; s.al.

2-butanone, 3-hydroxy-. See acetoin.

2-butanone, 3-methyl- (isopropyl methyl ketone). $CH_3COCH(CH_3)_2$; m.w. 86.08; col. liq.; m.p. −92; b.p. 93; s.w.; s.al.

2-butanone, 3-methyl-, oxime (methylisopropyl ketoxime). $CH_3C:NOH-CH(CH_3)_2$; m.w. 101.29; col. liq.; b.p. 157-8; s.w.; s.al.

1-butanone, 3-methyl-1-phenyl-. See isovalerophenone.

2-butanone, oxime (methyl ethyl ketoxime). $CH_3C:NOH(C_2H_5)$; m.w. 87.08; col. liq.; m.p. −29.5; b.p. 152; s.w.; s.al.

2-butanone, 1-phenyl- (benzyl ethyl ketone). $C_2H_5COCH_2C_6H_5$; m.w. 148.09; col. liq.; b.p. 230.2; i.w.; s.al.

2-butanone, 4-phenyl- (benzylacetone). $C_6H_5CH_2CH_2COCH_3$; m.w. 148.09; liq.; b.p. 235; s.al.

butanoyl bromide. See butyryl bromide.

butanoyl chloride. See butyryl chloride.

butanoyl chloride, 3-methyl-. See isovaleryl chloride.

2-butenal. See crotonaldehyde.

2-butenal, 2-methyl-. See tiglaldehyde.

1-butene (α-butylene; ethylethylene). $CH_3CH_2CH:CH_2$; m.w. 56.06; gas; m.p. −130; b.p. −5; i.w.; s.al.

2-butene (sym-dimethylethylene; β-butylene; pseudobutylene). $CH_3CH-CHCH_3$; m.w. 56.06; col. gas; b.p. cis 1, trans 2.5; i.w.; s.al.

1-butene, 4-bromo- (δ-bromo-α-butylene; vinylethyl bromide). $CH_2Br-CH_2CH:CH_2$; m.w. 134.97; b.p. 165-6; s.al.

3-butene-1, 1-dicarboxylic acid. See malonic acid, allyl-.

1-butene, 2, 3-dimethyl- (1-isopropyl-1-methylethylene). $CH_2C(CH_3)-CH(CH_3)_2$; m.w. 84.09; b.p. 56.0-6.5.

1-butene, 3, 3-dimethyl- (tert-butylethylene; pseudobutylethylene). $CH_2:CHC(CH_3)_3$; m.w. 84.09; b.p. 66.2-6.7.

2-butene, 2, 3-dimethyl- (tetramethylethylene). $(CH_3)_2C:C(CH_3)_2$; m.w. 84.09; liq.; b.p. 73.

cis-butenedioic acid. See maleic acid.

trans-butenedioic acid. See fumaric acid.

1-butene, 2-ethyl- (3-methylenepentane; uns-diethylethylene). $CH_2:C(C_2H_5)-CH_2CH_3$; m.w. 84.09; b.p. 66.2-6.7.

1-butene, 2-ethyl-3-methyl- (1-ethyl-1-isobutylethylene; 2-methyl-3-methylenepentane). $CH_2:C(C_2H_5)-CH(CH_3)_2$; m.w. 98.11; b.p. 88.7-9.1.

1-butene, 2-methyl- (uns-ethylmethylethylene). $CH_2:C(CH_3)CH_2CH_3$; m.w. 70.08; col. liq.; b.p. 31.0.

1-butene, 3-methyl- (isopropylethylene; α-isoamylene). $(CH_3)_2CHCH:CH_2$; m.w. 70.08; col. liq.; m.p. −135; b.p. 25; i.w.; s.al.

2-butene, 3-methyl- (trimethylethylene; β-isoamylene). $(CH_3)_2C:CHCH_3$; m.w. 70.08; col. inflam. liq.; m.p. −124; b.p. 38.4; s.w.; s.al.

3-butenenitrile. See allyl cyanide.

β-butenic acid. See 3-butenenoic acid.

2-butenoic acid, cis(?)-. See isocrotonic acid.

2-butenoic acid, trans(?)-. See crotonic acid.

3-butenenoic acid (vinylacetic acid; β-butenic acid). $CH_2:CHCH_2COOH$; m.w. 86.05; col. liq.; m.p. −39; b.p. 163; s.w.; s.al.

3-butenoic acid, 2-hydroxy-4-phenyl- (benzallactic acid; styrylglycolic acid). $C_6H_5CH:CHCHOHCOOH$; m.w. 178.08; need. f.w.; m.p. 46; b.p. 98; s.w.

2-butenoic acid, 2-methyl-. See tiglic acid.

2-butenoic acid, cis-2-methyl-. See angelic acid.

2-butenoic acid, 4-oxo-4-phenyl-. See acrylic acid, β-benzoyl-.

3-butenoic acid, 4-phenyl- (β-benzalpropionic acid). $C_6H_5CH:CHCH_2-COOH$; m.w. 162.08; need. f.w.; m.p. 88; s.w.; s.al.

1-buten-4-ol. See 3-buten-1-ol.

2-butenol. See sec-butyl alcohol.

2-buten-1-ol (propenylcarbinol; crotyl alcohol; crotonyl alcohol; γ-methylallyl alcohol). $CH_3CH:CHCH_2OH$; m.w. 72.06; col. liq.; m.p. < −30; b.p. 118; s.w.; s.al.

3-buten-1-ol (allylcarbinol; 1-buten-4-ol). $CH_2:CHCH_2CH_2OH$; m.w. 72.06; col. liq.; b.p. 113; s.w.; s.al.

3-buten-2-ol (methylvinylcarbinol). $CH_2:CHCHOHCH_3$; m.w. 72.06; col. liq.; b.p. 96-7.

2-buten-1-ol, acetate (2-butenyl ethanoate; crotyl acetate; crotonyl acetate). $CH_3COOC_4H_7$; m.w. 114.08; col. liq.; b.p. 129; s.w.; s.al.

3-buten-2-one, 4-p-anisyl- (anisalacetone; p-methoxybenzalacetone). $CH_3OC_6H_4CH:CHCOCH_3$; m.w. 176.09; leaf.; m.p. 72-4; i.w.; s.al.

3-buten-2-one, 4-(2-furyl)- (2-furalacetone; furfurylidene acetone). $C_4H_3O-CH:CHCOCH_3$; m.w. 136.06; wh. need.; m.p. 39-40; i.w.; s.al.

3-buten-2-one, 4-phenyl-. See acetone, benzal-.

3-buten-2-one, 4-(2, 6, 6-trimethyl-cyclohexenyl)-. See β-ionone.

3-buten-2-one, 4-(2, 6, 6-trimethyl-cyclohexenyl)-. See α-ionone.

3-buten-2-one, 4-(2, 2, 6-trimethyl-cyclohexenyl)-. See β-irone.

β-butenonitrile. See allyl cyanide.

3-buten-1-yne (vinylacetylene). $CH_2-CH:CH_2$; m.w. 52.03; col. liq.; b. 5 [737]

butesin (butyl p-aminobenzoate). $H_2-C_6H_4COO(CH_2)_3CH_3$; m.w. 193.1 wh. cr. powd.; m.p. 55-7; b.p. 147 s.w.; s.al.

butesin picrate $(H_2NC_6H_4COOC_4H_9)-C_6H_2(NO_2)_3OH$; m.w. 615.30; ye amor. powd.; m.p. 109.10; s.w.; s.a

butine. See butyne.

Butoben. N-butyl para-hydroxybenzate.

butraldehyde. See butyraldehyde.

butt. Best part of hide, directly ov rump.

butter color. See annatto.

butter of antimony. See antimon chloride, tri-.

button lac. See shellac.

Butvar. Acetal type resin made fro Gelva (q.v.) and butyraldehyde.

butyl acetate. See acetic acid, but ester.

butyl acetate, α, γ-dimethyl-. See 2 pentanol, 4-methyl-, acetate.

butyl acetate, β-ethyl-. See 1-butano 2-ethyl-, acetate.

butyl acetyl ricinoleate. See ricinolei acid, acetyl butyl-.

butyl alcohol (n) (1-butanol; propyl carbinol). $CH_3(CH_2)_2CH_2OH$; m.w 74.08; col. liq.; m.p. −89.2 to −89.8 b.p. 117.71; s.w.; s.al.

sec-butyl alcohol (2-butanol; ethyl methylcarbinol). $CH_3CH_2CHOH-CH_3$; m.w. 74.08; col. liq.; m.p. −8 b.p. 99.5-100; s.w.; s.al.

tert-butyl alcohol (2-methyl-2-propano trimethylcarbinol). $(CH_3)_3COH$; m.w 74.08; col. liq. or rhomb. pr. or pl m.p. 25.5; b.p. 82.8; s.w.; s.al.

butyl alcohol, 2-ethyl-. $(C_2H_5)_2CH-CH_2OH$; m.w. 102.11; sp.gr. 0.8328 b.p. 148.9; s.w.

tert-butyl alcohol, trichloro-. See chlorotone.

butyl aldehyde. See butyraldehyde.

butylamine (n) (1-aminobutane). $CH_3-(CH_2)_2CH_2NH_2$; m.w. 73.09; col. liq m.p. −50.5; b.p. 77.8; s.w.; s.al.

sec-butylamine ([α-methylpropyl] amine; 2-aminobutane). $CH_3CH-(NH_2)CH_2CH_3$; m.w. 73.09; col. liq m.p. −104.5; b.p. 63; s.w.; s.al.

tert-butylamine ([α, α-dimethylethyl amine; trimethylcarbinylamine) $(CH_3)_3CNH_2$; m.w. 73.09; col. liq m.p. −67.5; b.p. 46.4; s.w.; s.al.

butylamine (n), N-methyl-. $CH_3NH-C_4H_9$; m.w. 87.11; col. liq.; b.p. 91.

butylamine (n), α-methyl- (methylpropylcarbinylamine; sec-n-amyl amine; 2-aminopentane). $CH_3(CH_2)_2-CH(CH_3)NH_2$; m.w. 87.11; col. liq. b.p. 92; s.w.; s.al.

butylamine (n), γ-methyl-. See isoamylamine.

n-butylarsonic acid. See 1-butanearsonic acid.

butylbenzoyl benzoate. See benzoic acid, benzoylbutyl-.

butyl ortho-benzoyl benzoate. See benzoic acid, benzyl butyl, ortho-.

butyl bromide (n) (1-bromobutane; methylethylbromomethane). $C_2H_5-CH(CH_3)Br$; m.w. 136.99; col. liq. b.p. 91.3; i.w.

sec-butyl bromide (2-bromobutane; methylethylbromomethane). $C_2H_5-CH(CH_3)Br$; m.w. 136.99; col. liq. b.p. 91.3; i.w.

tert-butyl bromide (2-bromo-2-methyl propane; trimethylbromomethane). $(CH_3)_3CBr$; m.w. 136.99; col. liq. m.p. −20; b.p. 73.3.; i.w.

butyl butyrate. See butyric acid, butyl ester.

butyl carbitol. See diethylene glycol,

honobutyl ether.
yl cellosolve. See ethanol, 2-butoxy-.
yl chloral. See butyraldehyde, α, α, -trichloro-.
yl chloride (n) (1-chlorobutane). $CH_3(CH_2)_2CH_2Cl$; m.w. 92.53; col. liq.; m.p. −123.1; b.p. 78; s.w.; s.al.
-butyl chloride (2-chlorobutane; methyl ethylchloromethane). $C_2H_5CH(CH_3)Cl$; m.w. 92.53; col. liq.; m.p. −131.3; b.p. 68; s.w.; s.al.
t-butyl chloride (2-chloro-2-methylpropane; trimethylchloromethane). $(CH_3)_3CCl$; m.w. 92.53; col. liq.; m.p. −28.5; b.p. 51-2; s.w.; s.al.
tyl crotonate. See crotonic acid, butyl ester.
tyl cyanide (n.). See valeronitrile.
c-butyl cyanide. See butyronitrile, α-methyl-.
rt-butyl cyanide. See propionitrile, α, α-dimethyl-.
tyl disulfide (n) (1-butyldithiobutane). $[CH_3(CH_2)_3]_2S_2$; m.w. 178.26; b.p. 100-3 (15 mm); i.w.; s.al.
butylene. See 1-butene.
butylene. See 2-butene.
butylene. See propene, 2-methyl-.
butylene, δ-bromo-. See 1-butene, 4-bromo-.
butylene glycol. See 1, 2-butane-diol.
butylene glycol. See 1, 3-butane-diol.
utyl ether (n) (1-butoxybutane; di-n-butyl ether). $CH_3(CH_2)_3O(CH_2)_3CH_3$; m.w. 130.14; col. liq.; m.p. −95.2; b.p. 142; s.w.; s.al.
ec-butyl ether (2-[α-methylpropoxy]-butane; di-sec-butyl ether). $[CH_3CH_2CH(CH_3)]_2O$; m.w. 130.14; b.p. 121; s.w.; s.al.
utyl formate. See formic acid, butyl ester.
utyl furoate. See pyromucic acid, butyl ester.
utyl hydrogen sulfate. See butyl sulfuric acid (n).
utyl iodide (n) (1-iodobutane). $CH_3(CH_2)_3CH_2I$; m.w. 183.99; liq.; m.p. −103.5; b.p. 131; s.w.; s.al.
ec-butyl iodide (2-iodobutane; methylethyliodomethane). $C_2H_5CH(CH_3)I$; m.w. 183.99; col. liq.; m.p. −131.3; b.p. 68; s.w.; s.al.
tert-butyl iodide (2-iodo-2-methylpropane; trimethyliodomethane). $(CH_3)_3CI$; m.w. 183.99; liq.; m.p. −33.65; s.al.
butyl isocyanide (n) (butylcarbylamine). $CH_3(CH_2)_3NC$; m.w. 83.08; liq.; b.p. 118; i.w.; s.al.
tert-butyl isocyanide ([α, α-dimethylethyl]carbylamine). $(CH_3)_3CNC$; m.w. 83.08; lt. oil; b.p. 91 (737.5); s.al.
butyl isocyanide, γ-methyl-. See isoamyl isocyanide.
butyl lactate. See lactic acid, butyl ester.
butyl lerulinate. See lerulinic acid, butyl ester.
butyl mercaptan (n). See 1-butanethiol.
butyl nitrate (n). $CH_3(CH_2)_3ONO_2$; m.w. 119.08; liq.; b.p. 136; i.w.; s.al.
sec-butyl nitrate (α-methylpropyl nitrate). $C_2H_5CH(CH_3)ONO_2$; m.w. 119.08; liq.; b.p. 124; s.al.
butyl nitrite (n). $CH_3(CH_2)_3ONO$; m.w. 103.08; liq.; b.p. 75; s.al.
sec-butyl nitrite (α-methylpropyl nitrite). $C_2H_5CH(CH_3)ONO$; m.w. 103.08; liq.; b.p. 68; s.al.
tert-butyl nitrite (α, α-dimethylethyl nitrite). $(CH_3)_3CONO$; m.w. 103.08; lt. yel. liq.; b.p. 63; s.w.; s.al.
p-tert.-butyl phenol. See phenol, p-tert-butyl-.
butyl phosphate. $(C_4H_9)_2PO_4$; colorless liq., pleasant odor; sp.gr. 0.985; b.p. 255-260; f.p. 170; a miscible lacquer solvent; used in nitrocellulose plastics and for impregnating paper.
butyl phthalylbutyl glycollate. See glycolic acid, butylphthalyl butyl-.
butyl propionate. See propionic acid, butyl ester.
butyl stearate. See stearic acid, butyl ester.
butyl sulfate (n) (di-n-butyl sulfate). $(CH_3CH_2CH_2CH_2)_2SO_4$; m.w. 210.20; col. liq.; b.p. 97.4 (3 mm); i.w.
butyl sulfide (n) (dibutyl sulfide; butylthio butane). $(CH_3CH_2CH_2CH_2)_2S$; m.w. 146.20; liq.; m.p. −79.7; b.p. 182; i.w.; s.al.
sec-butyl sulfide (di-sec-butyl sulfide; 1-methyl-1-[α-methylpropylthio]propane). $[C_2H_5CH(CH_3)]_2S$; m.w. 146.20; liq.; b.p. 165; i.w.; s.al.
butylsulfuric acid (n) (butyl hydrogen sulfate). $C_4H_9OSO_2OH$; m.w. 154.14; syrup; s.w.; s.al.
1-butyne (ethylacetylene; 1-butine). $CH{\equiv}CCH_2CH_3$; m.w. 54.05; col. liq.; m.p. −130; b.p. 18.5; i.w.; s.al.
2-butyne (crotonylene; dimethylacetylene; 2-butine). $CH_3C{\equiv}CCH_3$; m.w. 54.05; liq.; b.p. 28.9; i.w.; s.al.
butynedioic acid. See acetylene dicarboxylic acid.
1-butyne, 3-methyl- (isopropylacetylene). $(CH_3)_2CHC{\equiv}CH$; m.w. 68.06; col. liq.; b.p. 29.3; i.w.; s.al.
1-butyne, 1-phenyl-. See benzene, 1-butynyl-.
2-butynoic acid. See tetrolic acid.
butyraldehyde (butanal; butyric aldehyde). $CH_3(CH_2)_2CHO$; m.w. 72.06; col. liq.; m.p. −99.0; b.p. 75.7; s.w.; s.al.
butyraldehyde, α-ethyl- (2-ethylbutanal). $CH_3CH_2CH(C_2H_5)CHO$; m.w. 100.09; col. liq.; b.p. 116-7; s.w.; s.al.
butyraldehyde, β-hydroxy-. See aldol.
butyraldehyde, β-methyl-. See isovaleraldehyde.
butyraldehyde, oxime (butanal oxime; butyraldoxime). $CH_3(CH_2)_2CH{:}NOH$; m.w. 87.08; col. liq.; m.p. −29.5; b.p. 152 (715); s.w.; s.al.
butyraldehyde, para-. See parabutyraldehyde.
butyraldehyde, phenylhydrazone (N-butylidene-N′-phenylhydrazine). $CH_3(CH_2)_2CH{:}NNHC_6H_5$; m.w. 162.13.
butyraldehyde, sodium bisulfite compound. $C_3H_7CHOHOSO_2Na$; m.w. 176.13; leaf.; s.w.; s.al.
butyraldehyde, α, α, β-trichloro- (2, 2, 3-trichlorobutanal; butyl chloral). $CH_3CHClCCl_2CHO$; m.w. 175.41; col. oily liq.; b.p. 164-5 (760); s.w.; s.al.
butyraldehyde, α, α, β-trichloro-, hydrate (2, 2, 3-trichloro-1, 1-butanediol; butyl chloral hydrate). $CH_3CHClCCl_2CH(OH)_2$; m.w. 193.43; rhomb. leaf. f.w.; m.p. 78; s.w.; s.al.
butyraldoxime. See butyraldehyde, oxime.
butyramide (butanamide; butyric amide). $CH_3CH_2CH_2CONH_2$; m.w. 87.08; rhomb. f.bx.; m.p. 116; b.p. 216; s.w.; s.al.
butyramide, β-bromo-γ-oxo-N-phenyl-. See acetoacetanilide, α-bromo-.
butyramide, β-methyl-. See isovaleramide.
butyramide, N-phenyl-. See butyranilide.
butyranilide (N-phenylbutyramide). $CH_3(CH_2)_2CONHC_6H_5$; monocl. leaf.; m.p. 91-2; b.p. 189 (15 mm); i.w.; s.al.
butyranilide, β-keto- See acetoacetanilide.
butyrase. Enzyme which splits the esters of lower fatty acids and mono- or polyvalent alcohols.
butyric acid (butanoic acid; ethylacetic acid). $CH_3CH_2CH_2COOH$; m.w. 88.06; col. liq.; m.p. −7.9; b.p. 163.5 (760); s.w.; s.al.
butyric acid, allyl ester (allyl butyrate; 2-propenyl butanoate). $C_3H_7COOCH_2CH{:}CH_2$; m.w. 128.09; liq.; b.p. 143; i.w.; s.al.
butyric acid, α-amino- (2-aminobutanoic acid). $CH_3CH_2CH(NH_2)COOH$; m.w. 103.08; col. leaf.; s.w.; s.al.
butyric acid, β-amino- (3-amonobutanoic acid). $CH_3CH(NH_2)CH_2COOH$; m.w. 103.08; need.; m.p. 184; s.w.; i.al.
butyric acid, γ-amino- (4-aminobutanoic acid; piperidic acid). $NH_2CH_2CH_2CH_2COOH$; m.w. 103.08; leaf. or need. f.dil.al.; m.p. 193; s.w.; i.al.
butyric acid, α-amino-α-methyl-. See isovaline.
butyric acid, α-amino-γ-methyl-mercapto-. See methionine.
butyric acid, amyl ester (amyl butyrate; pentyl butanoate). $C_3H_7COO(CH_2)_4CH_3$; m.w. 158.14; liq.; m.p. −73.2; b.p. 185; s.w.; s.al.
butyric acid, benzyl ester. $CH_3(CH_2)_2CO_2CH_2C_6H_5$; m.w. 178.11; b.p. 240; i.w.; s.al.
butyric acid, α-bromo- (2-bromobutanoic acid). $CH_3CH_2CHBrCOOH$; m.w. 166.97; col. oily liq.; m.p. −4; s.w.; s.al.
butyric acid, α-bromo-, ethyl ester (ethyl 2-bromobutanoate). $CH_3CH_2CHBrCOOC_2H_5$; m.w. 195.00; col. liq.; i.w.; s.al.
butyric acid, butyl ester (butyl butyrate; butyl butanoate). $CH_3CH_2CH_2COOC_4H_9$; m.w. 144.12; col. liq.; m.p. −91.5; b.p. 166.4; s.w.; s.al.
butyric acid, α, β-dibromo- (2, 3-dibromobutanoic acid). $CH_3CHBrCHBrCOOH$; m.w. 245.88; lng. need.; m.p. 86-7; s.w.; s.al.
butyric acid, α, α-dimethyl- (2, 2-dimethyl butanoic acid; ethyldimethylacetic acid). $CH_3CH_2C(CH_3)_2COOH$; m.w. 116.09; col. liq.; m.p. −14; b.p. 187; s.w.; s.al.
butyric acid, α, β-dimethyl- (2, 3-dimethylbutanoic acid; isopropylmethylacetic acid). $CH_3CH(CH_3)CH(CH_3)COOH$; m.w. 116.09; liq.; b.p. 189-91; s.w.; s.al.
butyric acid, α-ethyl- (2-ethylbutanoic acid; 3-pentanecarboxylic acid; diethylacetic acid). $(C_2H_5)_2CHCOOH$; m.w. 116.09; col. liq.; m.p. <−15; b.p. 194.6; s.w.; s.al.
butyric acid, ethylene ester. See glycol, dibutyrate.
butyric acid, ethyl ester (ethyl butyrate; ethyl butanoate). $CH_3CH_2CH_2COOC_2H_5$; m.w. 116.09; col. liq.; m.p. −93.3; b.p. 121.3; s.w.; s.al.
butyric acid, α-ethyl-α-methyl- (diethylmethylacetic acid). $CH_3CH_2C(C_2H_5)(CH_3)COOH$; m.w. 130.11; arom. oil.; m.p. <−20; b.p. 203-4; i.w.; s.al.
butyric acid, furfuryl ester. See furfuryl alcohol, butyrate.
butyric acid, geranyl ester. See geraniol, butyrate.
butyric acid, glyceryl ester. See glycerol, tributyrate.
butyric acid, α-hydroxy- (2-hydroxybutanoic acid). $CH_3CH_2CHOHCOOH$; m.w. 104.06; col. hyg. cr.; m.p. 42.5; s.w.; s.al.
butyric acid, β-hydroxy- (3-hydroxybutanoic acid). $CH_3CHOHCH_2COOH$; m.w. 104.06; monocl., syrup; m.p. 48-50; b.p. 130 (12); s.w.; s.al.
butyric acid, γ-hydroxy- (4-hydroxybutanoic acid). $CH_2OHCH_2CH_2COOH$; m.w. 104.06; liq.; m.p. −17.
butyric acid, γ-hydroxy-, lactone. See butyrolactone.
butyric acid, isoamyl ester (γ-methylbutyl butanoate). $CH_3(CH_2)_2COOC_5H_{11}$; m.w. 158.14; col. liq.; m.p. −73.2; b.p. 159-79; s.w.; s.al.
butyric acid, isobutyl ester (β-methylpropyl butanoate). $CH_3(CH_2)_2COOCH_2CH(CH_3)_2$; m.w. 144.12; col. liq.; b.p. 156.9; s.w.; s.al.
butyric acid, α-isonitroso-. See butyric acid, α-keto-, oxime.
butyric acid, α-keto- (2-oxobutanoic acid). $CH_3CH_2COCOOH$; m.w. 102.05; hyg. pl. or oil; m.p. 32; b.p. 85 (21 mm); s.w.; s.al.
butyric acid, α-keto-, oxime (α-isonitrosobutyric acid). $C_2H_5C(:NOH)COOH$; m.w. 117.06; need. f.w.; m.p. 151; s.w.; s.al.
butyric acid, γ-keto-γ-phenyl-. See propionic acid, β-benzoyl-.
butyric acid, α-methyl- (2-methylbutanoic acid; ethyl methylacetic acid; active valeric acid). $CH_3CH_2CH(CH_3)COOH$; m.w. 102.08; col. liq.; m.p. <−80; b.p. 174; s.w.; s.al.
butyric acid, methyl ester (methyl n-butyrate). $CH_3CH_2CH_2COOCH_3$; m.w. 102.08; col. liq.; m.p. <−95; b.p. 102.3; s.w.; s.al.
butyric acid, α-methylisoamyl ester. See 2-pentanol, 4-methyl-, butyrate.
butyric acid, p-phenyl phenacyl ester. $CH_3(CH_2)_2COOCH_2COC_6H_4C_6H_5$; m.w. 282.14; m.p. 97.
butyric acid, propyl ester (n-propyl butyrate). $CH_3CH_2CH_2COOC_3H_7$; m.w. 130.11; col. liq.; m.p. −95.2; b.p. 143; s.w.; s.al.
butyric acid, piperazinium salt. $C_4H_{10}N_2{\cdot}2C_3H_7COOH$; m.w. 262.22; wh. cr.; m.p. 89.5-90; s.w.; s.al.
butyric aldehyde. See butyraldehyde.
butyric amide. See butyramide.
butyric anhydride (butanoic anhydride). $(CH_3CH_2CH_2CO)_2O$; m.w. 158.11; col. liq.; m.p. −75.0; b.p. 198.
butyrin. See glycerol, tributyrate.
butyrolactone (4-hydroxybutanoic acid lactone; γ-hydroxybutyric acid lactone; butanolide). $CH_2CH_2CH_2COO$ (ring); m.w. 86.05; oil; b.p. 206; s.w.; s.al.
butyrometer. An instrument for determining the amount of butter in milk.
2-butyronaphthone, 1-hydroxy- (1-hydroxy-2-naphthyl propyl ketone; 2-butyryl-1-naphthol). $CH_3(CH_2)_2CO-C_{10}H_6OH$; m.w. 214.10; yel.-grn. need.; m.p. 78; i.w.; s.al.
butyrone. See 4-heptanone.
butyronitrile (butanenitrile; n-propyl cyanide). $CH_3(CH_2)_2CN$; m.w. 69.06; col. liq.; m.p. −112.6; b.p. 118; s.w.; s.al.
butyronitrile, β, γ-epoxy-. See epicyanohydrin.
butyronitrile, α-ethyl- (2-ethylbutane nitrile; diethylacetonitrile). $(C_2H_5)_2CHCN$; m.w. 97.09; oil; b.p. 144-6; s.al.
butyronitrile, α-methyl- (2-methylbutane nitrile; sec-butyl cyanide; methylethylacetonitrile). $CH_3CH_2CH(CH_3)CN$; m.w. 83.08; liq.; b.p. 125; s.al.
butyrophenone (phenyl propyl ketone). $CH_3CH_2CH_2COC_6H_5$; m.w. 148.09; col. liq.; m.p. 11; b.p. 232.3; i.w.; s.al.
butyryl bromide (butanoyl bromide). $CH_3(CH_2)_2COBr$; m.w. 150.97; liq.; b.p. 128.
butyryl chloride (butanoyl chloride). $CH_3(CH_2)_2COCl$; m.w. 106.51; col. liq.; m.p. −89.0; b.p. 102.
by-pass condenser. Condenser giving an a.c. path of comparatively low impedance around a circuit element.
by-product oven. Oven used for recovery of volatile substances during the carbonization of coal to form coke.

C

C acid. See 2-naphthylamine-4, 8-disulfonic acid.

C-stage resin. Thermosetting resin in the final stage in which it is infusible and insoluble; the state of the resin in the final molded article.

cable twist. See twist, cable.

cacao (cocoa). A powder obtained by roasting and finely pulverising cocoa beans freed from their shells.

cacao butter (cocoa butter). Solid fat obtained from dried kernels of cacao beans.

cachou. See cutch.

cacodyl. See arsine, tetramethyl bi-.

cacodyl chloride. See arsenic chloride, mono-, dimethyl-.

cacodyl, ethyl-. See arsine, tetraethyl bi-.

cacodyl hydride. See arsine, dimethyl-.

cacodylic acid. See arsinic acid, dimethyl-.

cacodyl oxide. See arsenic oxide, bis-dimethyl-.

cacodyl sulfide. See arsenic sulfide, bisdimethyl-.

cacodyl trichloride. See arsenic chloride, tri-, dimethyl-.

cacoxenite. A mineral; $FePO_4 \cdot Fe(OH)_3 \cdot 4\frac{1}{2}H_2O$; hex., yel. or brnsh.; sp.gr. 3.38; hardness 3-4.

cadaverine (1, 5-pentanediamine; pentamethylenediamine). $H_2N(CH_2)_5NH_2$; m.w. 102.13; syrupy fum. liq.; m.p. 9; b.p. 178-80; s.w.; s.al.

cade oil. See oil, cade.

cadmium. Cd; m.w. 112.41; hex. s.g. 8.642; m.p. 320.9; b.p. 767; i.w.; a metallic element, occurring in small quantities associated with zinc; soft, bluish white, malleable and ductile; prepared by reduction of its oxide, obtained in distillation of zinc; a component of some very low melting alloys, and alloyed with silver in electroplating.

cadmium acetate. $Cd(C_2H_3O_2)_2 \cdot 2H_2O$; m.w. 266.49; monocl. col.; odor ac. a.; s.g. 2.01; m.p. $-H_2O$, 130; s.w.; s.al.

cadmium benzoate. $Cd(C_6H_5COO)_2 \cdot 2H_2O$; m.w. 390.52; s.w.

cadmium borotungstate. $Cd_2B_2W_9O_{32} \cdot 18H_2O$; m.w. 2738.74; yel. cr.; s.w.

cadmium bromate. $Cd(BrO_3)_2 \cdot H_2O$; m.w. 386.26; rhomb. wh.; s.g. 3.758; s.w.; i.al.

cadmium bromide. $CdBr_2$; m.w. 272.24; yel. cr.; s.g. 5.192 [25]; m.p. 567; b.p. 963; s.w.; s.al.

cadmium bromide (hydrated). $CdBr_2 \cdot 4H_2O$; m.w. 344.30; sm. wh. need., efflor., s.w.; s.al.

cadmium carbonate. $CdCO_3$; m.w. 172.41; trig. wh.; s.g. 4.258 [4]; i.w.

cadmium chlorate. $Cd(ClO_3)_2 \cdot 2H_2O$; m.w. 315.36; col. pr.; deliq.; s.g. 2.28 [18]; m.p. 80; s.w.

cadmium chloride. $CdCl_2$; m.w. 183.32; hex. col.; s.g. 4.047 [25]; m.p. 568; b.p. 960; s.w.

cadmium chloride. $CdCl_2 \cdot 2\frac{1}{2}H_2O$; m.w. 228.36; monocl. col.; s.g. 3.327; s.w.

cadmium chloroacetate. $(C H_2ClCOO)_2Cd \cdot 6H_2O$; m.w. 407.45; s.g. 1.942 [25].

cadmium chloroacetate, di-. $(CHCl_2COO)_2Cd \cdot H_2O$; m.w. 386.27; need.; s.g. 2.132 [25].

cadmium chloroacetate, tri-. $(CCl_3COO)_2Cd \cdot 1\frac{1}{2}H_2O$; m.w. 464.18; rhomb. s.g. 2.093 [25].

cadmium cinnamate. $(C_6H_5CHCHCOO)_2Cd$; m.w. 406.52; s.w.

cadmium cobaltinitrite. $Cd_3CO(NO_2)_6$; m.w. 672.22; yel.; s.w.

cadmium cyanide. $Cd(CN)_2$; m.w. 164.43; cr.

cadmium dichloroacetate. See cadmium chloroacetate, di-.

cadmium, dibutyl-. $Cd(C_4H_9)_2$; m.w. 226.55; oil; s.g. 1.3056 [19.5]; m.p. −48; b.p. 103.5 [13.5].

cadmium diethyl- (cadmium ethyl). $(C_2H_5)_2Cd$; m.w. 170.49; col. liq.; sp.gr. 1.6564 [18.1]; m.p. −21; b.p. 64 [19.5].

cadmium, diisoamyl-. $Cd(C_5H_{11})_2$; m.w. 254.58; oil; s.g. 1.2210 [19]; m.p. −115; b.p. 121.5 [15].

cadmium, diisobutyl-. $Cd(C_4H_9)_2$; m.p. 226.55; oil; s.g. 1.2693 [18]; m.p. −37; b.p. 90.5 [20].

cadmium, dimethyl-. $(CH_3)_2Cd$; m.w. 142.46; col. liq.; sp.gr. 1.9846 [17.9]; m.p. −4.5; b.p. 105.5 [760].

cadmium dipropyl-. $Cd(C_3H_7)_2$; m.w. 198.52; oil; s.g. 1.420 [17.6]; m.p. −83; b.p. 84 [21.5].

cadmium ferrocyanide. $Cd_2Fe(CN)_6$; m.w. 436.71; i.w.

cadmium fluoride. CdF_2; m.w. 150.41; cub. wh.; s.g. 6.64; m.p. 1100; b.p. 1758; i.al.

cadmium fluosilicate. $CdSiF_6$; m.w. 254.47; hex. col.; s.w.; s.al.

cadmium fluosilicate, tetrapyridine. See cadmium tetrapyridine fluosilicate.

cadmium formate. $Cd(CHO_2)_2 \cdot 2H_2O$; m.w. 238.46; monocl.; s.g. 2.44; s.w.

cadmium fumarate. $CdC_4H_2O_4$; m.w. 226.43; s.w.

cadmium hydroxide. $Cd(OH)_2$; m.w. 146.43; trig. or amor. wh.; s.g. 4.79 [15].

cadmium iodate. $Cd(IO_3)_2$; m.w. 462.25; wh. cr.; s.g. 6.48; s.w.

cadmium iodate (hydrated). $Cd(IO_3)_2 \cdot H_2O$; m.w. 480.27; monocl. sm. cr.; s.w.

cadmium iodide (α). CdI_2; m.w. 366.25; hex. brnsh.; s.g. 5.670 [30]; m.p. 388; b.p. 713; s.w.

cadmium iodide (β). CdI_2; m.w. 366.25; s.g. 5.305 [30].

cadmium lactate. $Cd(C_3H_5O_3)_2$; m.w. 290.49 need.; s.w.; i.al.

cadmium maleate. $CdC_4H_2O_4 \cdot 2H_2O$; m.w. 262.46; s.w.

cadmium manganate, per-. $Cd(MnO_4)_2 \cdot 6H_2O$; m.w. 458.36; s.w.

cadmium nitrate. $Cd(NO_3)_2 \cdot 4H_2O$; m.w. 308.49; prism. need. wh., hyg.; s.g. 2.455 [17]; m.p. 100; b.p. 132; s.w.; s.al.

cadmium oxalate. $CdC_2O_4 \cdot 3H_2O$; m.w. 254.46; wh.; s.g. anh. 3.32 [18]; s.w.; i.al.

cadmium oxide. CdO; m.w. 128.41; amor., brown; s.g. 6.95; m.p. >1426; i.w.

cadmium oxide. CdO. m.w. 128.41; cubic br.; s.g. 8.15; i.w.

cadmium oxide, sub-. Cd_2O; m.w. 240.82; grn. amor.; s.g. 8.192 [16].

cadmium phosphate, ortho-. $Cd_3(PO_4)_2$; m.w. 527.27; amor. col.; m.p. 1500; i.w.

cadmium potassium cyanide. $Cd(CN)_2 \cdot 2KCN$; m.w. 294.64; cub. col.; s.g. 1.85; s.w.; s.al.

cadmium potassium iodide. $CdI_2 \cdot 2KI \cdot 2H_2O$; m.w. 734.32; wh.-yelsh. cr. powd., deliq.; s.g. 3.359; s.w.; s.al.

cadmium salicylate. $Cd(C_7H_5O_3)_2 \cdot H_2O$; m.w. 404.50; need. wh.; s.w.

cadmium selenate. $CdSeO_4 \cdot 2H_2O$; m.w. 291.64; rhomb.; s.g. 3.632; s.w.

cadmium silicate. $CdSiO_3$; m.w. 188.47; col.; m.w. 4.93; m.w. 1242; s.w.

cadmium sulfate. $CdSO_4$; m.w. 208.47; rhomb. wh.; s.g. 4.691; m.p. 1000; s.w.; i.al.

cadmium sulfate (hydrated). $3CdSO_4 \cdot 8H_2O$; m.w. 769.53; monocl. wh., efflo.; s.g. 3.09; s.w.; s.al.
$CdSO_4 \cdot 4H_2O$.; m.w. 280.53; s.g. 3.05; s.w.; i.al.

cadmium sulfide (greenockite). CdS; m.w. 144.47; hex.; yel.-orange; s.g. 4.82; m.p. 1750 [100 atm.].

cadmium sulfite. $CdSO_3$; m.w. 192.47; cryst.; s.w.; i.al.

cadmium tartrate. $CdC_4H_4O_6$; m.w. 260.44; wh. cr. powd.; s.w.

cadmium tetrapyridine fluosilicate. $Cd(C_5H_5N)_4SiF_6$; m.w. 570.66; tricl. wh.; s.g. 2.282.

cadmium trichloroacetate. See cadmium chloroacetate, tri-.

cadmium tungstate. $CdWO_4$; m.w. 360.41.; yel. cryst.

cadmium value. A measure of the amount of lower fatty acids in a fat.

cadmium yellow. The compound cadmium sulfide (q.v.), CdS, a bright yellow pigment.

caesium. See cesium.

caffeic acid (3, 4-dihydroxycinnamic acid). $(HO)_2C_6H_2CH:CHCOOH$; m.w. 180.06; yel. monocl. f.w.; m.p. 195; s.w.; s.al.

caffeine (1, 3, 7-trimethylxanthine; theine). $C_8H_{10}N_4O_2$; m.w. 194.11; wh. need. f.al.; cr. $(+1H_2O)$ f.w.; m.p. anh. 235-7; s.w.; s.al.

caffeine, benzoate. $C_8H_{10}N_4O_2 \cdot C_7H_6O_2$; m.w. 316.16; wh. cr.; s.w.; s.al.

caffeine, citrate. $C_8H_{10}N_4O_2 \cdot C_6H_8O_7$; m.w. 386.17; monocl.; s.w.

caffeine, hydriodide diiodide. $C_8H_{10}N_4O_2 \cdot HI \cdot I_2 \cdot 1\frac{1}{2}H_2O$; m.w. 602.90; dk. grn. pr.; m.p. 182-4; i.w.; s.al.

caffeine, hydrobromide. $C_8H_{10}N_4O_2 \cdot HBr \cdot 2H_2O$; m.w. 311.07; col. trans. cr.; s.w.

caffeine, hydrochloride. $C_8H_{10}N_4O_2 \cdot HCl \cdot 2H_2O$; m.w. 266.01; monocl. col.

caffeine, isovalerate. $C_8H_{10}N_4O_2 \cdot C_5H_{10}O_2$; m.w. 269.19; fatty glist. need.; s.w.

caffeine, mercurichloride. $C_8H_{10}O_2N_4 \cdot HgCl_2$; m.w. 465.63; col. need.; m.p. 246; s.w.

caffeine, salicylate. $C_8H_{10}N_4O_2 \cdot C_7H_6O_3$; m.w. 332.16; cr. masses; s.w.; s.al.

caffeine, sulfate. $C_8H_{10}N_4O_2 \cdot H_2SO_4$; m.w. 292.19; wh. need.

cairngorm. A brown variety of quartz, SiO_2.

cajeputole. See cineole.

calamine. See hemimorphite and smithsonite. Hemimorphite is, strictly, synonymous with calamine. The latter term, formerly applied to both zinc silicate and carbonate, now refers correctly only to the silicate, the term smithsonite being reserved for the carbonate. Confusion has resulted from reversal of this nomenclature by English mineralogists of the last century.

calamintha oil. See oil, marjoram.

calaverite. See gold telluride.

calc spar. See calcite.

Calcene. Special calcium carbonate used in rubber compounding.

calciferol. See vitamin D.

calcined. Burnt or incinerated, e.g. converting chalk to lime; the reduction of sulfur in sulfide ores, e.g. zinc sulfide converted to zinc oxide.

calcite (calcspar; Iceland spar). A mineral; $CaCO_3$; hex., col., wh. or yelsh.; rar. pa. gray, red, grn., bl. vlt.; sp.gr. 2.711; hardness 3.

calcium. Ca; m.w. 40.08; cub.; s.g. 1.55; m.p. 810; b.p. 1439±5; s.al. valence 2; a white, soft, metallic element, one of the alkaline earth metals, forming in combination 3.5% of the earth's crust; an essential constituent of teeth, bones, shells and leaves; found combined in many compounds; prepared by electrolysis of the fused chloride; unimportant in the free form.

calcium acetate. $Ca(C_2H_3O_2)_2$; m.w. 158.13; col.; s.w.; s.al.

calcium acetate. $Ca(C_2H_3O_2)_2 \cdot H_2O$; m.w. 176.14; col. need.; s.w.; s.al.

calcium aluminate. $CaAl_2O_4$; m.w. 158.02; rhomb. or monocl. col.; s.g. 3.67; m.p. 1600.

calcium aluminate. $Ca_3Al_2O_6$; m.w. 270.18; cub.; i.w.

calcium ammonium arsenate. $CaNH_4AsO_4 \cdot 6H_2O$; m.w. 305.14; monocl. col.; m.w. 1.905 [15]; s.w.

calcium ammonium phosphate. $CaNH_4PO_4 \cdot 7H_2O$; m.w. 279.25; monocl. col.; s.g. 1.561 [15]; i.w.

calcium arsenate. See arsenate, ortho-.

calcium arsenate, ortho-. $Ca_3(AsO_4)_2$; m.w. 398.10; wh. amor. powd.

calcium arsenate, ortho- (hydrated). $Ca_3(AsO_4)_2 \cdot 3H_2O$; m.w. 452.15; col. or wh. powd.; i.w.

calcium arsenide. Ca_3As_2; m.w. 270.10; red. cr.; s.g. 2.5 [15].

calcium arsenite. $CaAsO_3H$; wh. amorp. powd.; i.w.; used in mfr. of germicidals, insecticides.

calcium benzene m-disulfonate. $C_6H_4(SO_3)_2Ca$(1:3); m.w. 276; light gray powd.; s.w.

calcium benzoate. $Ca(C_6H_5COO)_2 \cdot 3H_2O$; m.w. 336.20; rhomb. col.; s.g. 1.436; s.w.

calcium bone phosphate, di-. $CaHPO_4$; impure dicalcium phosphate or bone phosphate of lime; raw fertilizer material.

calcium borate, meta-. $Ca(BO_2)_2$; m.w. 125.72; col. rhomb.; m.p. 1100; s.w.

calcium borate, meta- (hydrated). $Ca(BO_2)_2 \cdot 2H_2O$; m.w. 161.75; $Ca(BO_2)_2 \cdot 6H_2O$; m.w. 233.81; col. hex.

calcium boride. CaB_6; m.w. 105.00; cub. blk.; s.g. 2.33 [15]; i.w.

calcium bromate. $Ca(BrO_3)_2 \cdot H_2O$; m.w. 313.93; monocl.; s.g. 3.329; s.w.

calcium bromide. $CaBr_2$; m.w. 199.91; need., deliq.; s.g. 3.353 [22]; m.p. 765; b.p. 806-812; s.w.; s.al.

calcium bromide (hydrated). $CaBr_2 \cdot 3H_2O$; m.w. 253.96; rhomb.; m.p. 80.5; s.w.; s.al.
$CaBr_2 \cdot 6H_2O$; m.w. 308.01; hex. col.; m.p. 38.2; b.p. 149-50; s.w.; s.al.

calcium n-butyrate. $Ca(C_4H_7O_2)_2 \cdot H_2O$; m.w. 232.20; col.; s.w.

calcium cacodylate. $Ca[(CH_3)_2AsO_2]_2$; m.w. 314.03; wh. gran., alm. odorl. powd.; s.w.

calcium carbide. CaC_2; m.w. 64.08; rhomb. gray; s.g. 2.22; m.p. 2300.

calcium carbonate (aragonite). $CaCO_3$; m.w. 100.08; rhomb. col.; s.g. 2.93.

ium carbonate (calcite). $CaCO_3$; w. 100.08; hex. col.; s.g. 2.711 $^{25.2}$; p. 1339 $^{1295\ atm.}$.

ium carbonate (hydrated). $CaCO_3 \cdot H_2O$; m.w. 208.17; monocl.

ium chlorate. $Ca(ClO_3)_2 \cdot 2H_2O$; m. . 243.03; monocl. wh.-yelsh., deliq.; g. 2.711; m.p. $-H_2O$, >100; s.w.; al.

ium chlorate, per-. $Ca(ClO_4)_2$; m.w. 38.99; s.w.; s.al.

ium chloride (hydrophilite). $CaCl_2$; m.w. 110.99; cub. col.; deliq.; s.g. 2.152 ^{25}; m.p. 772; b.p. >1600; s.w.; s.al.

lcium chloride (hydrated). $CaCl_2 \cdot H_2O$; m.w. 129.01; col., deliq.; b.p. −4; s.w.; s.al.

$CaCl_2 \cdot 2H_2O$.; m.w. 147.03; col.; b.p. 30; s.w., s.al.

$CaCl_2 \cdot 6H_2O$; m.w. 219.09; trig. col., deliq.; sp.gr. 1.68 ^{17}; m.p. 29.92; b.p. 200; s.w., s.al.

lcium chlorite, hypo-. $Ca(ClO)_2 \cdot 4H_2O$; m.w. 215.06; col. cr., deliq.; s.w.

lcium chlorohypochlorite (bleaching powder). $CaOCl_2$; m.w. 126.99; wh. powd.

lcium chromate. $CaCrO_4 \cdot 2H_2O$; m.w. 192.12; monocl. pr., yel.; m.p. $-H_2O$, 200; s.w.; s.al.

lcium-chromium garnet. See uvarovite.

lcium cinnamate. $Ca(C_9H_7O_2)_2 \cdot 3H_2O$; m.w. 388.24; col. cr.; s.w.

lcium citrate. $Ca_3(C_6H_5O_7)_2 \cdot 4H_2O$; m.w. 570.38; need. wh.; m.p. $-2H_2O$, 130; b.p. $-4H_2O$, 185; s.w.; s.al.

lcium cyanamide. $CaCN_2$; m.w. 80.10; hex. rhbdr. col.; m.p. 1190(?).

lcium cyanide. $Ca(CN)_2$; m.w. 92.10; cubic; s.w.

lcium dithionate. $CaS_2O_6 \cdot 4H_2O$. m. w. 272.26; trig. col.; s.g. 2.176; s.w.

lcium, o-ditoluidine. $(CH_3C_6H_4NH)_2Ca$; m.w. 252.22; wh. powd.

lcium ethyl sulfate. $Ca(C_2H_5SO_4)_2 \cdot 2H_2O$; m.w. 326.31; wh. cr.; s.w.; s.al.

lcium ferricyanide. $Ca_3[Fe(CN_6)]_2 \cdot 12H_2O$; m.w. 760.20; red. need., deliq.; s.w.

lcium ferrocyanide. $Ca_2Fe(CN_6) \cdot 12H_2O$; m.w. 508.24; tricl. yel.; s.g. 1.68; s.w.

lcium fluoride (fluorite). CaF_2; m.w. 78.08; cub. col.; s.g. 3.180; m.p. 1360.

lcium fluosilicate. $CaSiF_6$; m.w. 182.14; wh. cr. powd.; s.g. 2.662 $^{17.5}$; s.w.; s.al.

lcium fluosilicate (hydrated). $CaSiF_6 \cdot 2H_2O$; m.w. 218.17; hex. col.; s.g. 2.254; i.al.

lcium formate. $Ca(CHO_2)_2$; m.w. 130.10; rhomb. col.; s.g. 2.015; s.w.; i.al.

lcium fumarate. $CaC_4H_2O_4 \cdot 3H_2O$; m. w. 208.14; rhomb. col.; s.w.

lcium glycerophosphate. $CaO_2 \cdot PO \cdot OC_3H_5(OH)_2$; m.w. 210.15; wh. cr. hyg. powd.; s.w.; i.al.

lcium, glycocoll. $(CH_2NHCOO)Ca$; m.w. 113.11; cr.; s.w.

lcium hydrate. See calcium hydroxide.

lcium hydride. CaH_2; m.w. 42.10; gray-wh. cr. powd.; s.g. 1.7.

lcium hydrosulfide. $Ca(SH)_2 \cdot 6H_2O$; m.w. 214.31; prism. col. s.w.; s.al.

lcium hydroxide. $Ca(OH)_2$; m.w. 74.10; rhomb. trig. col.; s.g. 2.230, (am.) 2.08; m.p. $-H_2O$ 580; i.al.

lcium iodate (lautarite). $Ca(IO_3)_2$; m.w. 389.92; tricl.; s.g. 4.591 ^{15}.

lcium iodate. $Ca(IO_3)_2 \cdot 6H_2O$; m.w. 498.01; rhomb.

lcium iodide. CaI_2; m.w. 293.92; yelsh.-wh. plates, deliq.; s.g. 3.956 ^{25}; m.p. 575; b.p. 718; s.w.; s.al.

lcium iodide (hydrated). $CaI_2 \cdot 6H_2O$; m.w. 402.01; m.p. 42; b.p. 160; s.w.; s.al.

lcium iodide, ethyl-. C_2H_5CaI; m.w. 196.04; amor. powd.; s.al.

lcium isobutyrate. $Ca[(CH_3)_2CHCO_2]_2 \cdot 5H_2O$; m.w. 304.27; col.; s.w.

lcium isovalerate. $Ca(C_5H_9O_2)_2 \cdot 3H_2O$; m.w. 296.27; wh. cr. powd.; s.w.

calcium lactate. $Ca(C_3H_5O_3)_2 \cdot 5H_2O$; m. w. 308.24; wh. powd.; m.p. $-3H_2O$, 100; s.w.; i.al.

calcium levulinate. $Ca(C_5H_7O_3)_2 \cdot 2H_2O$; m.w. 306.19; white cryst.; m.p. 108-125; s.w. used in medicine.

calcium linoleate. $Ca(C_{18}H_{31}O_2)_2$; m.w. 598.56; wh. amor. powd.; i.w.; s.al.

calcium magnesium chloride. $CaCl_2 \cdot MgCl_2$; white deliquescent crystals; s.w.; i.al.

calcium malate (act.). $CaC_4H_4O_5 \cdot 2H_2O$; m.w. 208.14; col.; s.w. i.al.

calcium malate (rac.). $CaC_4H_4O_5 \cdot 3H_2O$; m.w. 226.16; rhomb. col.; s.w.; i.al.

calcium malate, acid. $Ca(HC_4H_4O_5)_2 \cdot 6H_2O$; m.w. 414.25; rhomb. or wh. cr. powd.; s.w.

calcium maleate. $CaC_4H_2O_4 \cdot H_2O$; m.w. 172.11; rhomb. col.; s.w.

calcium malonate. $CaC_3H_2O_4 \cdot 4H_2O$; m. w. 214.16; s.w.

calcium manganate, per-. $Ca(MnO_4)_2 \cdot 4H_2O$; m.w. 350.00; purp., pr.; s.g. 2.4; s.w.

calcium mica. See margarite.

calcium molybdate (powellite). $CaMoO_4$; m.w. 200.08; tetr. col.; s.g. 4.35; i.w.; i.al.

calcium nitrate (nitrocalcite). $Ca(NO_3)_2$; m.w. 164.10; cub. col., hyg.; s.g. 2.36; m.p. 561; s.w.; s.al.

calcium nitrate (hydrated). $Ca(NO_3)_2 \cdot 3H_2O$; m.w. 218.14; m.p. 51.1.

calcium nitrate (α). $Ca(NO_3)_2 \cdot 4H_2O$; m.p. 236.16; monocl. col., deliq.; s.g. 1.82; m.p. α 42.7, β 39.7; b.p. 132; s.w.; s.al.

calcium nitride. Ca_3N_2; m.w. 148.26; br. cr.; s.g. 2.63 ^{17}; m.p. 900.

calcium nitrite (hydrated). $Ca(NO_2)_2 \cdot H_2O$; m.w. 150.11; hex. col.-yelsh., deliq.; s.g. 2.23 ^{24}, anh. 2.53 ^{20}; b.p. $-H_2O$, 100; s.w.; s.al.

$Ca(NO_2)_2 \cdot 4H_2O$; m.w. 204.16; col.; sp.gr. 1.674 ^{8}; m.p. $-H_2O$ 44; s.w.; s.al.

calcium oxalate. CaC_2O_4; m.w. 128.08; cub. col.; s.g. 2.2 ^{4}; i.w.

calcium oxide (lime). CaO; m.w. 56.08; cub. col.; s.g. 3.40; m.p. 2572; b.p. 2850; s.al.

calcium oxide, per-. CaO_2; m.w. 72.08; wh.; s.w.

calcium oxide, per- (hydrated). $CaO_2 \cdot 8H_2O$; m.w. 216.20; tetr., pearly; m.p. $-8H_2O$ 100; i.al.

calcium oxychloride. See calcium chlorohypochlorite.

calcium palmitate. $Ca(C_{16}H_{31}O_2)_2$; m.w. 550.56; wh. or yelsh.-wh. powd.; i.w.; s.al.

calcium phenate. $Ca(OC_6H_5)_2$; m.w. 226.16; redsh. powd.; s.w.; s.al.

calcium phenol sulfonate. $Ca[C_6H_4(OH)SO_3]_2 \cdot H_2O$; m.w. 404.29; wh. to pinkish powd.; s.w.; s.al.

calcium phosphate, di-. $CaHPO_4 \cdot 2H_2O$; m.w. 172.14; monocl. wh.; s.g. 2.306 ^{16}; i.al.

calcium phosphate, dihydrogen. See calcium phosphate, mono-.

calcium phosphate, hypo-. $Ca_2P_2O_6 \cdot 2H_2O$; m.w. 274.23; gel.; i.w.

calcium phosphate, meta-. $Ca(PO_3)_2$; m.w. 198.12; col.; s.g. 2.82; m.p. 975; i.w.

calcium phosphate, mono-. $Ca(H_2PO_4)_2 \cdot H_2O$; m.w. 252.17; tricl. col., deliq.; s.g. 2.220 ^{16}; m.p. $-H_2O$ 100.

calcium phosphate, ortho-, fluochloride (apatite). $3Ca_3(PO_4)_2 \cdot CaFCl$; m.w. 1025.38; col.; s.g. 3.14; m.p. 1270; s.w.

calcium phosphate, pyro-. $Ca_2P_2O_7$; m.w. 254.20; biaxial, col.; s.g. 3.09; m.p. 1230; i.w.

calcium phosphate, pyro- (brushite). $Ca_2P_2O_7 \cdot 5H_2O$; m.w. 344.28; monocl.; s.g. 2.25; s.w.

calcium phosphate, tri-. $Ca_3(PO_4)_2$; m.w. 310.28; amor. wh. powd.; s.g. 3.14; m.p. 1670; i.al.

calcium phosphide. Ca_3P_2; m.w. 182.28; red. cr.; s.g. 2.51.^{15}; m.p. >1600; i.al.

calcium phosphite, hypo-. $Ca(H_2PO_2)_2$; m.w. 170.15; monocl. wh.-gray; s.w.; i.al.

calcium phosphite, ortho-. $2CaHPO_3 \cdot 3H_2O$; m.w. 294.26; s.w.

calcium platinocyanide. $CaPt(CN)_4 \cdot 5H_2O$; m.w. 429.42; grn.-yel. cr.; s.w.

calcium plumbate. Ca_2PbO_4; m.w. 351.38; red-br. cr.; s.g. 5.71; i.w.

calcium plumbite. $CaPbO_3$; m.w. 279.30; cryst.; s.w.

calcium potassium sulfate (syngenite). $CaK_2(SO_4)_2 \cdot H_2O$; m.w. 328.42; monocl.; s.g. 2.60; m.p. 1004; i.al.

calcium propionate. $Ca(CH_3CH_2CO_2)_2 \cdot H_2O$; m.w. 204.17; col.; s.w.

calcium resinate. $Ca(C_{44}H_{62}O_4)_2$; m.w. 1349.06; yel.-wh.; i.w.

calcium salicylate. $Ca(C_7H_5O_3)_2 \cdot 3H_2O$; m.w. 368.20; oct. wh.; s.w.; s.al.

calcium selenate. $CaSeO_4$; m.w. 183.28; col., ($2H_2O$ monocl.); s.g. 2.93, $2H_2O$ 2.68; s.w.

calcium silicate (α) (pseudowollastonite). $CaSiO_3$; m.w. 116.14; monocl. col.; s.g. 2.905; m.p. 1540.

calcium silicate (β) (wollastonite). $CaSiO_3$; m.w. 116.14; monocl. col.; s.g. 2.915.

calcium silicide. $CaSi_2$; m.w. 96.20; s.g. 2.5; i.w.

calcium sodium sulfate. $CaNa_2(SO_4)_2 \cdot 2H_2O$; m.w. 314.23; monocl. need.; s.g. 2.64; m.p. $-2H_2O$ 80.

calcium stearate. $Ca(C_{18}H_{35}O_2)_2$; m.w. 606.64; wh. powd.; s.al., i.w.; used in waterproofing textiles, plastics, concrete, and wood.

calcium succinate. $CaC_4H_4O_4 \cdot 3H_2O$; m.w. 210.16; col.; s.w.

calcium sulfamate. $Ca(SO_3NH_2)_2 \cdot 4H_2O$; a white crystalline solid, very soluble in water; used for flameproofing paper, paper products and textiles.

calcium sulfate (anhydrite). $CaSO_4$; m.w. 136.14; rhomb. or monocl. col.; s.g. 2.96; m.p. monocl. 1450.

calcium sulfate (gypsum). $CaSO_4 \cdot 2H_2O$; m.w. 172.17; monocl. col.; s.g. 2.32; m.p. $-1\frac{1}{2}H_2O$ 128; b.p. $-2H_2O$, 163.

calcium sulfide (oldhamite). CaS; m.w. 72.14; cubic col.; s.g. 2.8 ^{15}.

calcium sulfite. $CaSO_3 \cdot 2H_2O$; m.w. 156.17; hex. col.; m.p. $-H_2O$ 100.

calcium sulfite, bi-. $Ca(HSO_3)_2$; m.w. 202.22; yelsh. liq.; s.w.

calcium tartrate (act.). $CaC_4H_4O_6 \cdot 4H_2O$; m.w. 260.17; rhomb.; s.w.; s.al.

calcium tartrate (rac.). $CaC_4H_4O_6 \cdot 4H_2O$; m.w. 260.17; tricl.; s.w.

calcium thiocarbonate. $CaCS_3$; m.w. 148.26; yel.; s.w.; s.al.

calcium thiocyanate. $Ca(CNS)_2 \cdot 3H_2O$; m.w. 210.26; wh. cr., deliq.; s.w.; s.al.

calcium thiosulfate. $CaS_2O_3 \cdot 6H_2O$; m.w. 260.29; tricl.; s.g. 1.872; s.w.; i.al.

calcium titanate (perovskite). $CaTiO_3$; m.w. 135.98; rhomb.; s.g. 4.10.

calcium tungstate (scheelite). $CaWo_4$; m.w. 288.08; tetra. col. or wh. sc.; s.g. 6.06; i.al.

calcium tungstate, meta-. $CaW_4O_{13} \cdot 10H_2O$; m.w. 1164.24; col. tricl.

calcrete. Conglomerates made by cementation of surface gravels by limestone.

calculus. Mathematical processes for solving problems containing continuously variable quantities.

caledonite. A mineral; $2(Pb, Cu)O \cdot SO_3 \cdot H_2O$; rhomb., deep grn.; sp.gr. 6.4; hardness 2.5-3.0.

calender. An ironing machine consisting of two or more large rollers, revolving against each other, to which heavy pressures may be applied, used in drying and glazing paper and textiles.

calendering. Process for imparting gloss, smoothness etc. to textiles and paper.

calendula (marigold). Dried florets of Calendula officinalis used to color butter and cheese and as an adulterant for saffron.

Calgon. See sodium phosphate, meta-.

caliber. Internal bore or diameter.

calibration. Determination of variation from standard or accuracy of a measuring instrument.

caliche. Natural Chilean saltpeter.

californite. A complex calcium-aluminum silicate used as an ornamental and gem stone.

calisaya bark. See cinchona bark.

Calodorant. Mixture of hydrocarbons and organic sulfur compounds for odorisation of natural gas.

calomel (horn mercury). A mineral; HgCl; tetr., wh., yelsh., grn., bl., redsh.; sp.gr. 6.482; hardness 1-2.

calomel electrode. See standard electrode.

calorescence. Emission of radiation of a shorter wave length than that absorbed.

Caloride. Cubes of calcium chloride (72%) used to extract moisture in air conditioning.

calorie. Quantity of heat required to raise 1 gram of water 1° C.; equal to 4.184×10^7 ergs.

calorie, defined. Unit of heat equal to 4.1850 absolute joules or 4.1833 international joules.

calorific value. Amount of heat produced when unit weight of a fuel is completely burned and combustion products are cooled to original temperature.

calorimeter. Instrument for measuring quantity of heat.

calorizing. Aluminum treatments for surfacing iron and steel.

calyx. Outer whorl or circle of floral leaves.

cam. Eccentric disc for changing rotary to reciprocating motion.

camber. Ratio of sagitta of an arc to length of chord; a stream-lined contour of a vehicle or machine.

camphane (1, 7, 7-trimethylnorcamphane; hydrocamphene; 1, 7, 7-trimethylbicyclo [2, 2, 1] heptane). $C_{10}H_{18}$; m.w. 138.14; hex. pl. or pr.; m.p. 152-4; i.w.; s.al.

camphane, 2-chloro-. See bornyl chloride; isobornyl chloride.

2-camphanol. See borneol.

2-camphanone. See camphor.

dl-camphene (dl-2, 2-dimethyl-3-methylenenorcamphane). $C_{10}H_{16}$; m.w. 136.12; feathery need.; m.p. 50; b.p. 159-60; i.w.; s.al.

d or l-camphene. $C_{10}H_{16}$; m.w. 136.12; d: feathery need.; m.p. 51; b.p. 160-2; i.w.; s.al.

l: cr.; m.p. 42-52; b.p. 158-60.

Camphol. See oxanilide.

α-camphol. See borneol.

dl-campholic acid (dl-1, 2, 2, 3-tetramethylcyclopentanecarboxylic acid). $C_5H_5(CH_3)_4COOH$; m.w. 170.14; col. tricl. pr.; m.p. (dl) 109, (d) 106, (l) 106-7; b.p. (d) 255, (l) 250; s.w.; s.al.

d-camphor (d-2-camphanone; Japan camphor; laurel camphor; Formosa camphor; d-2-keto-1, 7, 7-trimethylnorcamphane). $C_{10}H_{16}O$; m.w. 152.12; col. trig., hex.; m.p. 176-7; s.w.; s.al.

camphor, artificial. See bornyl chloride.

camphor, Borneo. See d-borneol.

camphor, birch. See betulinol.

camphor, Malay. See d-borneol.

camphor, ngai-. See l-borneol.

camphor oil. See oil, camphor.

camphor, parsley. See apiole.

camphor, Sumatra. See d-borneol.

α-camphoramic acid (α-camphoramidic acid; 3-carbamyl-1, 2, 2-trimethylcyclopentanecarboxylic acid; camphoric acid 3-monoamide). $C_5H_4(CH_3)_3(CONH_2)COOH$; m.w. 198.13; m.p. 176-7; s.w.; s.al.

β-camphoramic acid (β-camphoramidic acid; 3-carbamyl-2, 2, 3-trimethylcyclopentanecarboxylic acid; camphoric acid 1-monoamide). $C_5H_4(CH_3)_3(CONH_2)COOH$; m.w. 198.13; m.p. 112-3; s.w.; s.al.

camphor, 3-amino- (α-aminocamphor, 3-camphorylamine). $C_{10}H_{15}O \cdot NH_2$; m.w. 167.14: waxy; m.p. 110; b.p. 244; i.w.; s.al.

camphor, anise. See anethole.

camphor, betula. See betulinol.

d-camphor, α-bromo- (3-bromo-d-camphor [one form]). $C_{10}H_{15}BrO$; m.w. 231.03; col. monocl.; m.p. 78; s.w.; s.al.

d-camphor, α′ (or β)-bromo- (3-bromo-d-camphor [one form]). $C_{10}H_{15}BrO$; m.w. 231.03; m.p. 61; b.p. 130 [10]; i.w.; s.al.

d-camphor, α-chloro-' (3-chloro-d-camphor [one form]). $C_{10}H_{15}ClO$; m.w. 186.57; leaf.; m.p. 93-4; s.w.; s.al.

d-camphoric acid. $C_8H_{14}(COOH)_2$; m.w. 200.12; col. monocl. pr. or leaf.; m.p. 187; s.w.; s.al.

dl-camphoric acid (dl-cis-1, 2, 2-trimethyl-1, 3-cyclopentanedicarboxylic acid; paracamphoric acid). $C_8H_{14}(COOH)_2$; m.w. 200.12; col. monocl. need.; m.p. 202; s.w.; s.al.

l-camphoric acid (l-cis-1, 2, 2-trimethyl-1, 3-cyclopentanedicarboxylic acid). $C_8H_{14}(COOH)_2$; m.w. 200.12; m.p. 187; s.w.; s.al.

camphoric acid, 1-monoamide. See β-camphoramic acid.

camphoric acid, 3-monoamide. See α-camphoramic acid.

d-camphoric anhydride. $C_{10}H_{14}O_3$; m.w. 182.11; rhomb. pr. f.al.; m.p. 221; s.w.; s.al.

dl-camphoric anhydride (dl-cis-1, 2, 2-trimethyl-1, 3-cyclopentanedicarboxylic anhydride). $C_8H_{14}(CO)_2O$; m.w. 182.11; rhomb. f.al.; m.p. 221; b.p. 270; s.w.; s.al.

d-camphor, 3-nitro- (α-nitrocamphor). $C_{10}H_{15}O{\cdot}NO_2$; m.w. 197.13; monocl. pr. f.bz.; m.p. 100-1; i.w.; s.al.

l-camphoronic acid (l-2, 3-dimethyl-1, 2, 3-butanetricarboxylic acid; l-α, α, β-trimethyltricarballylic acid). $(CH_3)_2C(COOH)C(CH_3)(COOH)CH_2COOH$; m.w. 218.11; hyg. need. f.w.; m.p. 164-5; b.p. 195-210 [13]; s.w.; s.al.

d-camphor, oxime. $C_{10}H_{16}NOH$; m.w. 167.14; monocl. need., or pr.f. dil. al.; m.p. 118; i.w.; s.al.

camphor pinacol (l) (l-2, 2′-bicamphane-2, 2′-diol.). $C_9H_{16}COHCOHC_9H_{16}$; m.w. 306.27; rhomb. bisphenoidal; m.p. 157.8; i.w.; s.al.

3-camphorylamine. See camphor, 3-amino-.

β-camphylamine (2, 3, 3-trimethyl-1-cyclopentene-1-ethylamine). $C_8H_{13}{-}CH_2CH_2NH_2$; m.w. 153.16; liq.; b.p. 194-6.

canadine (l-tetrahydroberberine). $C_{20}H_{21}NO_4$; m.w. 339.17; silky need. f.al.; m.p. 133-4; i.w.; s.al.

canadol. See petroleum ether.

canal rays. Emission of positive ions that have come thru openings in the cathode of a gas-discharge tube.

cananga oil. See oil, ylang ylang.

cancrinite. A mineral; $4Na_2O{\cdot}CaO{\cdot}{\cdot}4Al_2O_3{\cdot}2CO_2{\cdot}9SiO_2{\cdot}3H_2O$; hex., wh., gray, yel., grn., bl., redsh.; sp.gr. 2.42-2.50; hardness 5-6.

candelilla wax. See wax, candelilla.

candle, British standard. A standard in photometry equivalent to light produced by a spermaceti candle, ¾ inch in diameter burning at rate of 120 grams per hour.

candle, international. Unit of luminous intensity, equals 1 English sperm candle (approximately). It is a specified fraction of the average horizontal candlepower of a group of 45 carbon-filament lamps preserved at the Bureau of Standards.

candle nut oil. See oil, candle nut.

candlepower. See luminous intensity.

candlepower, spherical. See spherical candlepower.

candoluminescence. Luminescence of an incandescent body distinguished from visible radiation due to temperature alone.

cane sugar. See sucrose.

cannabis indica. A resin obtained from Indian hemp, and used as a narcotic in medicine.

cannel coal. A variety of bituminous or subbituminous coal of uniform and compact fine-grained texture burning with a luminous, smoky flame; used for production of gas and oil.

Cannizzaro reaction. Reaction of aldehydes (which contain no hydrogen on the carbon atom adjacent to the carbonyl group) with a cold concentrated solution of sodium or potassium hydroxide whereby half of its molecules are reduced to an alcohol and half oxidized to an acid, e.g. $2C_6H_5{\cdot}CHO + NaOH \rightarrow C_6H_5{\cdot}CH_2OH + C_6H_5{\cdot}COONa$.

canonical. Simplest possible completely general form.

cantharene (dihydro-o-xylene). $C_6H_8(CH_3)_2$; m.w. 108.09; col. oily liq.; b.p. 135; i.w.; s.al.

cantharide. Dried coleopterous insect used in medicine.

cantharidin (2, 3-dimethyl-7-oxabicyclo-[2, 2, 1] heptane-2, 3-dicarboxylic anhydride). $C_{10}H_{12}O_4$; m.w. 196.09; col. rhomb. pl.; m.p. 218; s.w.; s.al.

caoutchouc (rubber, India rubber). Coagulated latex of various rubber trees and shrubs.

cap rock. Rather impervious rock above gas or oil-bearing layer.

capacitance (capacity). The quantity of electricity necessary to raise the potential difference between a condenser's electrodes to unity (as 1 volt); usually measured in farads and microfarads.

capacitor. Electrical condenser of fixed capacitance used as a standard or as a capacitance load.

capacity. Heaviest load that can be applied to load receiving element under specified conditions of concentration without inducing stresses, in any member, in excess of working stresses stipulated for the materials involved in a scale; see also capacitance.

cape asbestos. See crocidolite.

capillarity. Rise of liquid in capillary tubes or fine spaces between fibers due to surface tension.

capillary. Very fine bore tube; a fine blood vessel connecting arteries and veins.

caporcianite. See laumonite.

capraldehyde (decanal; capric aldehyde; caprinaldehyde; n-decyl aldehyde). $CH_3(CH_2)_8CHO$; m.w. 156.16; liq.; b.p. 208-9; i.w.; s.al.

capraldehyde, oxime (decanal oxime; caprinaldoxime). $CH_3(CH_2)_8{-}CH{:}NOH$; m.w. 171.17; leaf. f. dil. me. al.; m.p. 69; s.al.

capramide (decanamide; n-decylic amide; capric amide). $CH_3(CH_2)_8CONH_2$; m.w. 171.17; cr. m.p. 108; i.w.; s.al.

capric acid (decanoic acid; n-capric acid; n-decoic acid; n-decylic acid). $CH_3(CH_2)_8COOH$; m.w. 172.16; col. need.; m.p. 31.5; b.p. 268-70; s.w.; s.al.

capric acid, ethyl ester (ethyl caprate; ethyl decanoate). $CH_3(CH_2)_8COO{-}C_2H_5$; m.w. 200.19; col. liq.; m.p. −19.96; b.p. 245; s.w.; s.al.

capric acid, methyl ester (methyl decanoate; methyl caprate). $CH_3{-}(CH_2)_8COOCH_3$; m.w. 186.17; col. liq.; m.p. −18; b.p. 224; i.w.; s.al.

capric acid, α-octyl- (2-octyldecanoic acid; 9-heptadecanecarboxylic acid; di-n-octylacetic acid). $[CH_3(CH_2)_7]_2{-}CHCOOH$; m.w. 284.28; need. or leaf. f.al.; m.p. 38.5; b.p. 270-5 [100]; i.w.; s.al.

capric aldehyde. See capraldehyde.

capric amide. See capramide.

capric anhydride (decanoic anhydride; n-decylic anhydride). $(CH_3[CH_2]_8CO)_2O$; m.w. 326.30; cr.; m.p. 23.9; i.w.; s.al.

caprinaldehyde. See capraldehyde.

caprinaldoxime. See capraldehyde, oxime.

caprinitrile (decanenitrile; capric nitrile; n-nonyl cyanide). $CH_3(CH_2)_8CN$; m.w. 153.16; col. liq.; m.p. −17.9; b.p. 243.7; i.w.; s.al.

caproaldehyde (hexanal; n-caproic aldehyde; n-hexoic aldehyde). $CH_3{-}(CH_2)_4CHO$; m.w. 100.09; col. liq.; b.p. 131; i.w.; s.al.

caproaldehyde, α-ethyl- (2-ethylhexanal; butyl ethyl acetaldehyde). $C_4H_9{-}CH(C_2H_5)CHO$; m.w. 128.12; col. liq.; m.p. <−100; b.p. 163.4; s.w.

caproaldehyde, oxime (hexanal oxime; capronaldoxime). $CH_3(CH_2)_4CH{:}{-}NOH$; m.w. 115.11; cr.; m.p. 51; s.al.

caproaldehyde, α, β, γ, δ-tetrahydroxy-. See fucose.

caproamide (hexanamide). $CH_3(CH_2)_4{-}CONH_2$; m.w. 115.11; cr.; m.p. 101.0; b.p. 255; s.w.; s.al.

caproic acid (n) (hexanoic acid; n-hexoic acid). $CH_3(CH_2)_4COOH$; m.w. 116.09; col. oily liq.; m.p. −1.5 to −2.0; b.p. 205; s.w.; s.al.; its esters are important in the manufacture of flavors, perfumes and essential; used in the synthesis of pharmaceuticals, rubber chemicals.

caproic acid, α-amino-. See norleucine.

caproic acid; α-bromo- (2-bromohexanoic acid). $CH_3(CH_2)_3CHBrCOOH$; m.w. 195.00; liq.; b.p. 240; s.al.

caproic acid, amyl ester (amyl caproate; pentyl hexanoate). $CH_3(CH_2)_4COO{-}C_5H_{11}$; m.w. 186.17; col. liq.; b.p. 222.2.

caproic acid, butyl ester (butyl caproate; butyl hexanoate). $CH_3(CH_2)_4COO{-}C_4H_9$; m.w. 172.16; col. liq.; b.p. 204.3; s.w.; s.al.

caproic acid, α, ε-diamino-. See lysine.

caproic acid, α-ethyl- (butylethylacetic acid; 3-heptanecarboxylic acid; 2-ethylhexanoic acid). $CH_3(CH_2)_3{-}CH(C_2H_5)COOH$; m.w. 144.12; col. liq.; m.p. <0; b.p. 223-5.

caproic acid, ethyl ester (ethyl caproate; ethyl hexanoate). $CH_3(CH_2)_4COO{-}C_2H_5$; m.w. 144.12; col. to yelsh. liq.; m.p. −67.5; b.p. 166-7; s.w.; s.al.

caproic acid, α-hydroxy- (2-hydroxyhexanoic acid). $CH_3(CH_2)_3CHOH{-}COOH$; m.w. 132.09; col. need.; m.p. 62; s.w.; s.al.

caproic acid, γ-hydroxy-, lactone (4-hydroxyhexanoic acid lactone). $CH_3{-}CH_2CH(CH_2)_2COO$; m.w. 114.08; col. liq.; m.p. <−18; b.p. 220; s.w.; s.al.

caproic acid, isoamyl ester (γ-methylbutyl hexanoate). $CH_3(CH_2)_4COO{-}C_5H_{11}$; m.w. 186.17; col. liq.; b.p. 94-6 [10]; i.w.; s.al.

caproic acid, α-methyl- (2-methylhexanoic acid). $CH_3(CH_2)_3CH(CH_3){-}COOH$; m.w. 130.11; liq.; b.p. 209.6; s.w.; s.al.

caproic acid, δ-methyl- (5-methylhexanoic acid; isoamylacetic acid; isoheptylic acid). $(CH_3)_2CH(CH_2)_3{-}COOH$; m.w. 130.11; col. liq.; m.p. <−25; b.p. 211.5; s.w.; s.al.

caproic acid, methyl ester (methyl hexanoate; methyl caproate). $CH_3{-}(CH_2)_4COOCH_3$; m.w. 130.11; col. liq.; b.p. 149.5; i.w.; s.al.

caproic acid, p-phenylphenacyl ester. $CH_3(CH_2)_4COOCH_2COC_6H_4C_6H_5$; m.w. 310.17; m.p. 65.

caproic acid, piperazinium salt. $C_4H_{10}{-}N_2{\cdot}2C_5H_{11}COOH$; wh. cr.; m.p. 111-1.5; s.w.; s.al.

caproic aldehyde. See caproaldehyde.

caproic anhydride (hexanoic anhydride). $[CH_3(CH_2)_4CO]_2O$; m.w. 214.17; col. oil; m.p. −40.6; s.al.

caproic nitrile. See capronitrile.

caprokol. See resorcinol, 4-hexyl-.

capronaldoxime. See caproaldehyde, oxime.

caprone. See 6-hendecanone.

capronitrile (hexanenitrile; caproic nitrile; n-amyl cyanide). $CH_3(CH_2)_4{-}CN$; m.w. 97.09; col. liq.; m.p. −79.4; b.p. 163; s.w.; s.al.

caprophenone, 2, 4-dihydroxy- (4-caproylresorcinol). $CH_3(CH_2)_4COC_6H_2{-}(OH)_2$; m.w. 208.12; m.p. 56; b.p. 196-8 [7]; i.w.; s.al.

caproyl chloride (hexanoyl chloride). $CH_3(CH_2)_4COCl$; m.w. 134.54; col. liq.; m.p. −87.3; b.p. 153.

capryl acetate. See acetic acid, capryl ester.

capryl alcohol. See 1-octanol.

caprylaldehyde (octanal; caprylic aldehyde; n-octylaldehyde). $CH_3(CH_2)_6{-}CHO$; m.w. 128.12; col. liq.; b.p. 163.4; s.w.; s.al.

caprylaldehyde, oxime (octanal oxime; caprylaldoxime). $CH_3(CH_2)_6CH{:}{-}NOH$; m.w. 143.14; cr. m.p. 58; b.p. 120-5 [10].

caprylamide (octanamide). $CH_3(CH_2)_6{-}CONH_2$; m.w. 143.14; col. leaf.; m.p. 110; s.w.; s.al.

sec-n-caprylamine. See heptylamine, α-methyl-.

capryl chloride (decanoyl chloride). $CH_3(CH_2)_8COCl$; m.w. 190.61; col. liq.; m.p. −34.5; b.p. 232.3.

caprylene. See octylene.

caprylic acid (octanoic acid; n-octoic acid; n-octylic acid). $CH_3(CH_2)_6{-}COOH$; m.w. 144.12; col. leaf. or oily liq.; m.p. 16; b.p. 237.5; s.w. s.al.

caprylic acid, α-amino-, dl- (dl-2-aminooctanoic acid). $CH_3(CH_2)_5CH(NH_2){-}COOH$; m.w. 159.14; waxy pl.; m.p. 263-4; s.w.; s.al.

caprylic acid, ethyl ester (ethyl caprylate; ethyl octanoate). $CH_3(CH_2)_6COO{-}C_2H_5$; m.w. 172.16; col. liq.; m.p. −44.8; b.p. 207-8 [760]; s.w.; s.al.

caprylic acid, α-hydroxy- (2-hydroxyoctanoic acid). $CH_3(CH_2)_5CHOH{-}COOH$; m.w. 160.12; pl.; m.p. 69.5; s.w.; s.al.

caprylic acid, isoamyl ester (γ-methylbutyl octanoate). $CH_3(CH_2)_6COO{-}C_5H_{11}$; m.w. 214.20; col. liq.; b.p. 136 [10]; i.w.; s.al.

caprylic acid, methyl ester (methyl octanoate; methyl caprylate). $CH_3{-}(CH_2)_6COOCH_3$; m.w. 158.14; col. liq.; m.p. −41; b.p. 192.9; i.w.; s.a

caprylic acid, p-phenylphenacyl ester. $CH_3(CH_2)_6COOCH_2COC_6H_4C_6H_5$; m.w. 338.20; m.p. 67.

caprylic alcohol. See 1-octanol.

caprylic anhydride (octanoic anhydride; n-octoic anhydride). $[CH_3(CH_2)_6{-}CO]_2O$; m.w. 270.23; liq.; m.p. −1; b.p. 285; s.al.

caprylidene. See 1-octyne.

caprylone. See 8-pentadecanone.

caprylonitrile (octanenitrile; n-heptyl cyanide). $CH_3(CH_2)_6CN$; m.w. 125.13; col. liq.; m.p. −45.6; b.p. 205.2; i.w.; s.al.

caprylyl chloride (octanoyl chloride). $CH_3(CH_2)_6COCl$; m.w. 162.57; liq. m.p. −6; b.p. 195.55.

capsicin. The active principle of capsicum (q.v.).

capsicum (pepper, red pepper) $CH_3OC_{17}H_{24}NO{\cdot}OH$; the dried, ripe fruit of a tropical plant used as a condiment and in medicine.

capsule. Outer margin surrounding protoplasm of individual microscopic organisms.

caramel. The brown substance obtained by carefully heating sugar and used to color various foods.

carat (karat). A twenty-fourth part used to express proportion of gold in an alloy, e.g., pure gold is 24 carat; the standard carat used for jewels is equal to 200 mg.

caraway oil. See oil, caraway.

Carbagel. Dehydrating agent composed of calcium chloride absorbed in activated charcoal.

carbamamidine. See guanidine.

carbamic acid, benzyl ester (benzyl carbamate; benzyl aminomethanoate) $NH_2COOCH_2C_6H_5$; m.w. 151.08; leaf.; m.p. 86; s.w.; s.al.

carbamic acid, cyclohexylethylthiolthiono-, cyclohexylethylammonium salt. $C_6H_{11}(C_2H_5)NCSSNH_3(C_2H_5){-}C_6H_{11}$; m.w. 330.40; pa. yel. cr.; m.p. 95-6; s.w.; s.al.

carbamic acid, cyclopentamethylenedithio-, salts. See under 1-piperidinecarbodithioic acid.

carbamic acid, dibenzylthiolthiono-, dibenzylammonium salt. $(C_6H_5{-}$

$H_2)_2NCSSNH_2(CH_2C_6H_5)_2$; m.w. 70.37; yel. cr.; m.p. 82.5; s.w.; s.al.

amic acid, dibenzylthiolthiono-, zinc lt. $[(C_6H_5CH_2)_2NCSS]_2Zn$; m.w. 09.85; cream colored powd.; m.p. 76-7; i.w.; i.al.

amic acid, dibutylthiolthiono-, zinc alt. $[(C_4H_9)_2NCSS]_2Zn$; m.w. 473.92; ream colored powd.; m.p. 108-9; i.w.; al.

bamic acid, diethylthiolthiono-, benzal iester. $[(C_2H_5)_2NCSS]_2CHC_6H_5$; n.w. 386.46; yel. cr.; m.p. 178-9; .w.; s.al.

bamic acid, diethylthiolthiono-, di-thylammonium salt. $(C_2H_5)_2NCSS-NH_2(C_2H_5)_2$; m.w. 222.31; pa. yel. pl.; m.p. 81-2; s.w.; s.al.

bamic acid, diethylthiolthiono-, 6-nitrobenzothiazyl ester. See 2-benzothiazolthiol, 6-nitro-, diethylthiolthionocarbamic ester.

rbamic acid, diethylthiolthiono-, zinc salt. $[(C_2H_5)_2NCSS]_2Zn$; m.w. 361.79; wh. powd.; m.p. 173-4; i.w.; i.al.

rbamic acid, dimethylthiolthiono-, dimethylammonium salt. $(CH_3)_2NCSS-NH_2(CH_3)_2$; m.w. 166.25; pa. yel. pl.; m.p. 129-30; s.w.; s.al.

rbamic acid, dimethylthiolthiono-, selenium tetrasalt. $[(CH_3)_2NCSS]_4Se$; m.w. 559.90; dense or cr.; m.p. 179-80; i.w.; i.al.

rbamic acid, dimethylthiolthiono-, zinc salt. $[(CH_3)_2NCSS]_2Zn$; m.w. 305.73; wh. powd.; m.p. 248-50; i.w.; i.al.

rbamic acid, 2, 4-dinitrophenyl ester. $(CH_3)_2NCSSC_6H_3(NO_2)_2$; m.w. 287.21; yel. cr.; m.p. 139; i.w.; s.al.

rbamic acid, diphenyl-, ethyl ester (diphenylurethan). $(C_6H_5)_2NCOOC_2H_5$; m.w. 241.13; col. pr. f. lgr.; m.p. 71-2; b.p. 360; s.w.; s.al.

rbamic acid, dithio- (aminodithioformic acid; aminomethanethionothiolic acid). NH_2CS_2H; m.w. 93.15; col. need.; s.al.

rbamic acid, ethyl ester (ethyl carbamate; urethan). $NH_2COOC_2H_5$; m.w. 89.06; col. need. f. lgr.; m.p. 50; b.p. 180; s.w.; s.al.

rbamic acid, ethyl-, ethyl ester (ethylurethan). $C_2H_5NHCOOC_2H_5$; m.w. 117.09; col. liq.; b.p. 176; s.w.

rbamic acid, ethylidenedi-, diethyl ester (ethylidenediurethan). $CH_3CH(NHCOOC_2H_5)_2$; m.w. 204.14; need.; m.p. 125-6; s.w.; s.al.

rbamic acid, isoamyl ester. (isoamyl carbamate; isoamyl urethan). $NH_2COOC_5H_{11}$; m.w. 131.11; need. f.w.; m.p. 63.5; b.p. 220; s.w.; s.al.

rbamic acid, isobutyl ester (β-methylpropyl aminomethanoate). $NH_2COOCH_2CH(CH_3)_2$; m.w. 117.09; col. leaf. m.p. 55; b.p. 206-7; i.w.; s.al.

rbamic acid, isobutyl-, ethyl ester (ethyl isobutylcarbamate; isobutylurethan). $(CH_3)_2CHCH_2NHCOOC_2H_5$; m.w. 145.13; col. liq.; m.p. < -65; b.p. 96 ^{17}; i.w.

rbamic acid, methyl ester (methyl urethan). NH_2COOCH_3; m.w. 75.05; col. pl.; m.p. 52; b.p. 177; s.w.; s.al.

rbamic acid, methyl-, ethyl ester (methylurethan). $CH_3NHCOOC_2H_5$; m.w. 103.08; col. liq.; b.p. 170; s.w.; s.al.

rbamic acid, nitro-, ethyl ester (nitrourethan). $NO_2NHCOOC_2H_5$; m.w. 134.06; col. leaf. f. lgr.; m.p. 64; s.w.; s.al.

rbamic acid, phenyl-, esters. See under carbanilic acid.

rbamic acid, propyl ester (n-propyl carbamate). $NH_2COOC_3H_7$; m.w. 103.08; col. pr.; m.p. 60-1; b.p. 200; s.w.; s.al.

rbamic acid, propyl-, ethyl ester (n-propylurethan). $C_3H_7NHCOOC_2H_5$; m.w. 131.11; liq.; b.p. 191.5-2.5 ^{760}; s.w.

rbamic acid, thiol-, ethyl ester (aminomethanethiolic acid ethyl ester; thiourethan). $NH_2COSC_2H_5$; m.w. 105.12; pl. or leaf.; m.p. 108; s.w.; s.al.

carbamic acid, thiono-, ethyl ester (thiourethan; xanthogenamide). $NH_2CSOC_2H_5$; m.w. 105.12; monocl. leaf. f. et.; m.p. 41-2; i.w.; s.al.

carbamide. See urea.

carbamide oxide. See urea, hydroxy-.

carbamonitrile. See cyanamide.

carbamyl chloride (chloroformamide; urea chloride; carbamide chloride). H_2NCOCl; m.w. 79.48; col. liq.; m.p. 50; b.p. 61-2.

carbanil. See isocyanic acid, phenyl ester.

carbanilic acid, ethyl ester (N-phenylurethan; ethyl phenylcarbamate). $C_6H_5NHCOOC_2H_5$; m.w. 165.09; lng. need. f.w.; m.p. 52; b.p. 238; s.w.; s.al.

carbanilic acid, o-hydroxy-, lactone. See 2(3)-benzoxazolone.

carbanilic acid, isobutyl ester (isobutyl phenylcarbamate). $C_6H_5NHCOOCH_2CH(CH_3)_2$; m.w. 193.13; cr.; m.p. 80; s.w.; s.al.

carbanilide (N, N′-diphenylurea; symdiphenylurea). $C_6H_5NHCONHC_6H_5$; m.w. 212.11; col. rhomb. f. al.; m.p. 238-9; s.w.; s.al.

carbanilide, N, N′-diethyl- (N, N′-diethyl-N, N′-diphenylurea). $CO[N(C_2H_5)(C_6H_5)]_2$; m.w. 268.17; col. cr.f.w.; m.p. 72-3; s.w.; s.al.

carbanilide, 2, 2′-dimethylthio- (di-o-tolylthiourea). $CS(NHC_6H_4CH_3)_2$; m.w. 256.20; v.sm. col. need. f.al.; m.p. 156-8; b.p. 218; s.w.; s.al.

carbanilide, 4, 4′-dimethylthio- (di-p-tolylthiourea). $CS(NHC_6H_4CH_3)_2$; m.w. 256.20; v.sm. col. need. f.al.; m.p. 178-9; s.w.; s.al.

carbanilide, N, N′-diphenyl-. See urea, tetraphenyl-.

carbanilide, N-methyl-. $C_6H_5(CH_3)NCONHC_6H_5$; m.w. 226.13; col. need.; m.p. 104; b.p. 203-5; i.w.; s.al.

carbanilide, 2, 2′, 4, 4′-tetranitro-. $[(NO_2)_2C_6H_3NH]_2CO$; m.w. 392.11; yel. need.; m.p. 189; i.w.; s.al.

carbanilide, thio- (N, N′-diphenylthiourea; sym-diphenylthiourea). $(C_6H_5NH)_2CS$; m.w. 228.17; col. rhomb. leaf. f.al.; m.p. 154; i.w.; s.al.

carbanilide, thio-o, o′-dimethyl- (symdi-o-tolylthiourea). $(CH_3C_6H_4NH)_2CS$; m.w. 256.20; need. f.al.; m.p. 158; b.p. 216-8; i.w.; s.al.

carbanilonitrile. See cyananilide.

carbazide. See carbohydrazide.

carbazole (dibensopyrrole; diphenylenimine). $C_6H_4NHC_6H_4$; m.w. 167.08;

col. leaf.; m.p. 246; b.p. 354.8; i.w.; s.al.

carbazole, N-acetyl-. $CH_3CONC_{12}H_8$; m.w. 209.09; need. f.w.; m.p. 69; s.w.; s.al.

carbazole, N-ethyl-. $C_{12}H_8NC_2H_5$; m.w. 195.11; leaf. f.et.; m.p. 67-8; s.al.

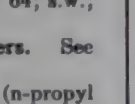
carbazylic acid. Acid amidine, e.g., formamidine.

carbene. Constituent of asphalt insoluble in cold carbon tetrachloride and soluble in carbon disulfide.

carbenoid. Class of materials precipitated when certain crude oils or bitumens are dissolved in naphtha.

carbide. A chemical combination of carbon and any other element. The "carbide" of commerce is calcium carbide.

carbinol. Term applied to a complex alcohol regarded as a substitution product of methanol, e.g.



is called diethylcarbinol.

carbinol, acetyl. See acetol.

carbinol, acetylenyl-. See 2-propyn-1-ol.

carbinol, acetylmethyl-. See acetoin.

carbinol, allyl-. See 3-buten-1-ol.

carbinol, allyldiethyl-. See 5-hexen-3-ol, 3-ethyl-.

carbinol, allyldimethyl-. See 4-penten-2-ol, 2-methyl-.

carbinol, allylmethyl-. See 4-penten-2-ol.

carbinol, p-aminodiphenyl-. See benzohydrol, p-amino-.

carbinol, amyl-. See 1-hexanol.

carbinol, amyldiethyl-. See 3-octanol, 3-ethyl-.

carbinol, amyldimethyl-. See 2-heptanol, 2-methyl-.

carbinol, amylhexyl-. See 6-dodecanol.

carbinol, amylmethyl-. See 2-heptanol.

carbinol, amylpropyl-. See 4-nonanol.

carbinol, benzoyl-. See acetophenone, α-hydroxy-.

carbinol, benzoylphenyl-. See benzoin.

carbinol, benzyl-. See phenethyl alcohol.

carbinol, benzyl phenyl-. See ethanol, 1, 2-diphenyl-.

carbinol, bis-p-aminophenyl-4-amino-m-tolyl-. See rosaniline.

carbinol, butyl-. See 1-pentanol.

carbinol, sec-butyl-. See 1-butanol, 2-methyl-.

carbinol, tert-butyl-. See 1-propanol, 2, 2-dimethyl-.

carbinol, butyldimethyl-. See 2-hexanol, 2-methyl-.

carbinol, tert-butyldimethyl-. See 2-butanol, 2, 3, 3-trimethyl-.

carbinol, butylethylmethyl-. See 3-heptanol, 3-methyl-.

carbinol, butylmethyl-. See 2-hexanol.

carbinol-o-carboxylic anhydride, triphenyl-. See phthalide, 3, 3-diphenyl-.

carbinol, dibutyl-. See 5-nonanol.

carbinol, diethyl-. See 3-pentanol.

carbinol, diethylisobutyl-. See 3-hexanol, 3-ethyl-5-methyl-.

carbinol, diethylisopropyl-. See 3-pentanol, 3-ethyl-2-methyl-.

carbinol, diethylmethyl-. See 3-pentanol, 3-methyl-.

carbinol, diethylpropyl-. See 3-hexanol, 3-ethyl-.

carbinol, p, p′-dihydroxytriphenyl-. See benzaurin.

carbinol, diisoamyl-. See 5-nonanol, 2, 8-dimethyl-.

carbinol, diisobutyl-. See 4-heptanol, 2, 6-dimethyl-.

carbinol, diisopropyl-. See 3-pentanol, 2, 4-dimethyl-.

carbinol, dimethyl-. See isopropyl alcohol.

carbinol, dimethylethyl-. See 2-butanol, 2-methyl-.

carbinol, dimethylphenyl-. See 2-propanol, 2-phenyl-.

carbinol, dimethylpropenyl-. See 3-penten-2-ol.

carbinol, dimethylpropyl-. See 2-pentanol, 2-methyl-.

carbinol, diphenyl-. See benzohydrol.

carbinol, diphenylene-. See 9-fluorenol.

carbinol, dipropyl-. See 4-heptanol.

carbinol, ethyl-. See propyl alcohol.

carbinol, ethyldipropyl-. See 4-heptanol, 4-ethyl-.

carbinol, ethylhexyl-. See 3-nonanol.

carbinol, ethylisobutyl-. See 3-hexanol, 5-methyl-.

carbinol, ethylisopropyl-. See 3-pentanol, 2-methyl-.

carbinol, ethylisopropylmethyl-. See 3-pentanol, 2, 3-dimethyl-.

carbinol, ethylmethyl-. See sec-butyl alcohol.

carbinol, ethylphenyl-. See 1-propanol, 1-phenyl-.

carbinol, ethylpropyl-. See 3-hexanol.

carbinol, ethylvinyl-. See 1-penten-3-ol.

carbinol, ethynyl-. See 2-propyn-1-ol.

carbinol, α-furyl-. See furfuryl alcohol.

carbinol, heptyl-. See 1-octanol.

carbinol, heptylmethyl-. See 2-nonanol.

carbinol, hexyldimethyl-. See 2-octanol, 2-methyl-.

carbinol, hexylpropyl. See 4-decanol.

carbinol, isoamyl-. See 1-pentanol, 4-methyl-.

carbinol, isoamylmethyl-. See 2-hexanol, 5-methyl-.

carbinol, isobutyl-. See isoamyl alcohol.

carbinol, isobutyldimethyl-. See 2-pentanol, 2, 4-dimethyl-.

carbinol, isobutylmethyl-. See 2-pentanol, 4-methyl.

carbinol, isobutylphenyl-. See 1-butanol, 3-methyl-1-phenyl-.

carbinol, isohexyl-. See 1-hexanol, 5-methyl-.

carbinol, isopropyl-. See isobutyl alcohol.

carbinol, isopropyldimethyl-. See 2-butanol, 2, 3,-dimethyl-.

carbinol, methyl-. See ethyl alcohol.

carbinol, methyl-tert-butyl-. See pinacolyl alcohol.

carbinol, methyldipropyl-. See 4-heptanol, 4-methyl-.

carbinol, methylhexyl-. See 2-octanol.

carbinol, methylisopropyl-. See 2-butanol, 3-methyl-.

carbinol, methylnonyl-. See 2-hendecanol.

carbinol, methylphenyl-. See benzyl alcohol, α-methyl-.

carbinol, methylpropyl-. See 2-pentanol.

carbinol, methylvinyl-. See 3-buten-2-ol.

carbinol, 1-naphthyldiphenyl- (diphenyl-α-naphthylcarbinol). $(C_6H_5)_2(C_{10}H_7)COH$; m.w. 310.14; cr. f. lgr.; m.p. 136; i.w.; s.al.

carbinol, nonyl-. See 1-decanol.

carbinol, phenyl-. See benzyl alcohol.

carbinol, propenyl-. See 2-buten-1-ol.

carbinol, propyl-. See butyl alcohol(n).

carbinol, styryl-. See cinnamic alcohol.

carbinol, α-thienyl-. See 2-thiophenecarbinol.

carbinol, m-tolyl- (m-methylbenzyl alcohol; m-tolubenzyl alcohol). $CH_3C_6H_4CH_2OH$; m.w. 122.08; col. liq.; m.p. < -20; b.p. 217; s.w.; s.al.

carbinol, o-tolyl- (o-methylbenzyl alcohol; o-tolubenzyl alcohol). $CH_3C_6H_4CH_2OH$; m.w. 122.08; col. need.; m.p. 34; b.p. 219; s.w.; s.al.

carbinol, p-tolyl- (p-methylbenzyl alcohol; p-tolubenzyl alcohol). $CH_3C_6H_4CH_2OH$; m.w. 122.08; col. need.; m.p. 59.5; b.p. 217; s.w.; s.al.

carbinol, p, p′, p″-triaminotriphenyl-. See pararosaniline.

carbinol, triethyl-. See 3-pentanol, 3-ethyl-.

carbinol, trimethyl-. See tert-butyl alcohol.

carbinol, p_3-trinitrotriphenyl-. See carbinol, tris (p-nitrophenyl)-.

carbinol, triphenyl-. $(C_6H_5)_3COH$; m.w. 260.12; hex. pr. f. bz.; m.p. 162.5; b.p. >360; i.w.; s.al.

carbinol, tripropyl-. See 4-heptanol, 4-propyl-.

carbinol, tris (p-aminophenyl)-. See pararosaniline.

carbinol, tris (p-nitrophenyl)- (p_3-trinitrotriphenylcarbinol; 4, 4′, 4″-trinitrotritanol). $(NO_2C_6H_4)_3COH$; m.w. 395.13; monocl. or rhomb. cr.f.bz.; m.p. 193; s.al.

carbinylamine, diethyl-. See propylamine, α-ethyl-.

carbinylamine, dimethylethyl-. See tert-amylamine.

carbinylamine, methylisopropyl-. See propylamine, α, β-dimethyl-.

carbinylamine, methylpropyl-. See butylamine (n), α-methyl-.

carbinylamine, trimethyl-. See tert-butylamine.

Carbitol. See diethylene glycol, monoethyl ether.

Carbitol acetate. See diethylene glycol, monoethyl ether acetate.

Carbitol acetate, butyl. $CH_3COOC_2H_4OC_2H_4OC_4H_9$; a useful solvent in formulations of nitrocellulose and synthetic resin coatings; b.p. 245; i.w.; miscible with most organic liquids and dissolves many oils, resins, and gums.

Carbitol, butyl. See diethylene glycol, monobutyl ether.

Carbitol, diethyl. See ether, bis (β-ethoxyethyl).

Carbitol, methyl. See diethylene glycol, monomethyl ether.

carbocinchomeronic acid (2, 3, 4-pyridinetricarboxylic acid). $C_5H_2N(COOH)_3 \cdot 1\frac{1}{2}H_2O$; m.w. 238.07; rhomb. f.w.; m.p. $-H_2O$, 115-20; s.w.; s.al.

β-carbocinchomeronic acid. See 3, 4, 5-pyridinetricarboxylic acid.

carbodiimide, diphenyl- (carbodiphenyl-

imide). $C_6H_5N:C:NC_6H_5$; m.w. 194.09; α: syrup; b.p. 330-1. β: cr.; m.p. 168-70; s.w.; s.al.

carbodiphenylimide. See carbodiimide, diphenyl-.

-carbodithioic. Suffix of organic acid where both oxygen atoms of the carboxyl are replaced by sulfur.

carbohydrate. Compound containing carbon combined with hydrogen and oxygen in the proportion in which they occur in water, e.g. cane sugar, $C_{12}H_{22}O_{11}$, and starch, $(C_6H_{10}O_5)_n$.

carbohydrazide (carbonic acid dihydrazide; carbazide). $CO(NHNH_2)_2$; m.w. 90.08; need. f.dil.al.; s.w.; s.al.

carbohydrazide, 1, 5-diphenyl- (symdiphenylcarbazide). $(C_6H_5NHNH)_2CO$; m.w. 242.14; leaf.; m.p. 172-3; i.w.; s.al.

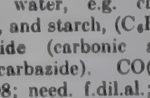
carbolic acid. See phenol.

carbolic acid, refined. A mixture of monohydric phenols of substantial phenol content and refined to conform to a specification.

carbolic oil. See oil, carbolic.

carboline. Class of organic compounds with three closed rings, the middle one being a pyrrole and the others a pyridine and benzol ring, e.g. α-

carboline,



Carbolineum. Trade name for various coal-tar preparations consisting of the heavier oils and used for preserving wood.

carboloy. An alloy of the composition tungsten carbide (q.v.), W_2C, embedded in cobalt; used in cutting tools because of its extreme hardness.

carbomethene. See ketene.

carbon. C; at. wt. 12.010; at. no. 6; m.p. sublimes above 3500° C; b.p. 4200° C; sp.gr. amorph. 1.88; graphite 2.25; diamond 3.51; valence 2, 3, or 4; a non-metallic element existing in several allotropic forms; occurring free in nature as the diamond and graphite, and in impure form as coal, and combined as carbon dioxide, carbonates, and in all living things. The allotropic forms are diamond, graphite, and amorphous carbon, all insoluble in common solvents, but soluble in molten metals from which they crystallize out as graphite, or, if under pressure, partly as diamond. Carbon is unique in forming almost an infinite number of compounds (organic compounds), a half million now being known.

carbon, activated. A more or less pure carbon made from dense carbonaceous matter such as nut-shells and possessing a high adsorptive capacity, used in gas masks, for decolorizing liquids, etc.

carbon atom, quaternary. A carbon atom having four other carbon atoms directly attached to it.

carbon atom, secondary. A carbon atom having two other carbon atoms directly attached to it.

carbon atom, tertiary. A carbon atom having three other carbon atoms attached to it.

carbon bisulfide. See carbon disulfide.

carbon black. See gas black.

carbon bromide, tetra- (tetrabromomethane). CBr_4; m.w. 331.66; wh. tabl.; s.g. 3.42; m.p. α 48.4, β 90.1; b.p. 189.5; i.w.; s.al.

carbon bromide, tri-. C_2Br_6; m.w. 503.50; s.g. 3.823; b.p. 210; i.al.

carbon chloride, hexa-. See ethane, hexachloro-.

carbon chloride, tetra- (tetrachloromethane). CCl_4; m.w. 153.83; col. liq.; s.g. 1.595; m.p. −23.0; b.p. 76.8; s.w.; s.al.

carbon chloride, tri- (hexachloroethane). C_2Cl_6; m.w. 236.74; rhomb., tricl. or cub., col.; s.g. 2.091; m.p. 185; b.p. 185; i.w.; s.al.

carbon, Conradson. See Conradson carbon.

carbon, decolorizing. See carbon, activated; animal charcoal; charcoal.

carbon, fixed. Carbonaceous matter left in residual coke when a hydrocarbon product is burned in a covered vessel in absence of free oxygen and under specified experimental conditions.

carbon fluoride, tetra-. CF_4; m.w. 88.00; col.; m.p. −80; b.p. −15; s.w.

carbon, free. See free carbon.

carbon, gas. A hard form of carbon obtained as a by-product in the manufacture of coal-gas, used to make graphitic crucibles and carbon electrodes.

carbon iodide, tetra-. CI_4; m.w. 519.68; octahdr. red.; s.g. 4.32; i.w.; s.al.

carbon nitride. C_2N_2; m.w. 22.02; col.; s.g. 0.87; m.p. −34.4; b.p. −20.5; s.w.

carbon oxide, di- (carbonic anhydride; carbonic acid gas). CO_2; 44.00; col. odorl. gas; m.p. −56.6 [5.2 atm.]; s.w.; s.al.

carbon oxide, mon-. CO; 28.00; col. odorl. poisonous gas; d. 1.250° g/l; s.g. lq. 0.793; m.p. −207; b.p. −192; s.al., s.w.

carbon oxide, sub-. C_3O_2; m.w. 68.00; col. gas or liq.; s.g. liq. 1.114 [0°]; m.p. −107; b.p. 6.3.

carbon oxybromide (carbonyl bromide). $COBr_2$; m.w. 187.83; s.g. 2.44; b.p. 64.5.

carbon oxysulfide. See carbonyl sulfide.

carbon selenosulfide. CSSe; m.w. 123.26; liq.; m.p. −85; b.p. 84.5; i.w.; s.al.

carbon silicide. CSi_2; m.w. 68.12; gray cryst.; sp.gr. 2.5; i.al.; d.w.

carbon sulfide, di-. CS_2; m.w. 76.12; col. liq.; s.g. 1.261$^{\frac{0}{4}}$; m.p. −111.6; b.p. 46.3; s.al., s.w.

carbon sulfide, mono-. CS; m.w. 44.06; red. powd.; s.g. 1.66; b.p. 200; i.w.; i.al.

carbon tellurosulfide. CSTe; m.w. 171.56; yel.-red; m.p. −54.

carbon thionyl chloride (thiophosgene). $CSCl_2$; m.w. 114.97; red-yel. liq.; s.g. 1.509 [15]; b.p. 73.5.

carbon thionyl perchloride. $CSCl_4$; m.w. 185.89; yel.; s.g. 1.712 [15]; b.p. 146-7.

carbonado (bort.). Imperfect or black diamonds used in cutting and grinding tools and machines; see diamond.

-carbonal. Suffix for a substituting CHO group, e.g. as in benzene carbonal, C_6H_5CHO.

carbonate. The dibasic salt of carbonic acid, H_2CO_3, e.g. potassium carbonate, K_2CO_3; the radical, CO_3=.

Carbonex. Solid coal tar hydrocarbon with high free carbon content; a rubber softener.

carbonic acid. H_2CO_3; m.w. 62.02; soln. only; s.w.

carbonic acid, chloro-, esters. See under formic acid, chloro-.

carbonic acid, dibutyl ester. $CO(OCH_2CH_2CH_2CH_3)_2$; m.w. 174.14; col. liq.; b.p. 207 [720]; i.w.; s.al.

carbonic acid, diethyl ester (ethyl carbonate). $(C_2H_5)_2CO_3$; m.w. 118.08; col. inflam. liq.; m.p. −43.0; b.p. 125.8; i.w.; s.al.

carbonic acid, dihydrazide. See carbohydrazide.

carbonic acid, diisoamyl ester (isoamyl carbonate). $CO(OC_5H_{11})_2$; m.w. 202.17; liq.; b.p. 228.7.

carbonic acid, diisobutyl ester (isobutyl carbonate). $CO[OCH_2CH(CH_3)_2]_2$; m.w. 174.14; liq.; b.p. 190.3; i.w.; s.al.

carbonic acid, dimethyl ester (methyl carbonate). $CO(OCH_3)_2$; m.w. 90.05; col. liq.; m.p. 0.5; b.p. 90-1; i.w.; s.al.

carbonic acid, diphenyl ester (phenyl carbonate; diphenyl carbonate). $(C_6H_5)_2CO_3$; m.w. 214.08; need. f.al.; m.p. 78; 81 b.p. 306; i.w.; s.al.

carbonic acid, dipropyl ester. $CO(OCH_2CH_2CH_3)_2$; m.w. 146.11; col. liq.; b.p. 168.2; s.w.; s.al.

carbonic acid, dithiol-, diethyl ester (ethyl dithiolcarbonate; carbon disulfethyl). $CO(SC_2H_5)_2$; m.w. 150.20; yel. liq.; b.p. 196.7; i.w.; s.al.

carbonic acid, ethyl methyl ester. $CH_3C_2H_5CO_3$; m.w. 104.06; col. liq.; m.p. −14.5; b.p. 109.2; i.w.; s.al.

carbonic acid gas. See carbon dioxide.

carbonic acid, guaiacol ester. See guaiacol carbonate.

carbonic acid, thiolthio-, O-ethyl ester. See xanthogenic acid.

carbonic acid, trithio-. $CS(SH)_2$; m.w. 110.20; red. brn. oil; s.al.

carbonic anhydride. See carbon oxide, di-.

carbonic gas. See carbon oxide, di-.

carboniferous. The period of geological classification, succeeding the Devonian and preceding the Jurassic, when the giant trees and ferns which formed our present coal deposits grew; producing or containing carbon or coal.

carbonimide, esters. See under isocyanic acid.

carbonium salt. Alkyl halide in which three hydrogen atoms in the methyl group have been replaced by aryl radicals and which acts as an electrolyte when dissolved, e.g. triphenyl methyl bromide.

carbonization. The formation of free carbon, e.g. when coal is destructively carbonized forming coke.

carbonization, low temperature. See low temperature carbonization.

carbonizing. Chemical treatment of wool to remove vegetable matter.

carbonyl bromide. See carbon oxybromide.

carbonyl chloride. See phosgene.

carbonyl sulfide (carbon oxysulfide). COS; m.w. 60.06; gas; m.p. −138; b.p. −50.2; s.w.; s.al.

Carboraffin. A decolorizing black made from peat.

carborundum. See silicon carbide.

carborundum, artificial. See moissanite.

carbostyril (2-quinolinol or 2 [1]-quinolone; o-aminocinnamic acid, lactam). C_9H_7NO; m.w. 145.06; pr.f.al.; m.p. 200; s.w.; s.al.

carbostyril, 3-ethyl-. C_6H_4NH- | ——— $COC(C_2H_5)CH$; m.w. 173.09; col. cr.; ——— |

m.p. 168.

carbostyril, 4-methyl- (2 [1]-lepidone). $C_{10}H_9NO$; m.w. 159.08; col. need. f.w.; m.p. 217.4; b.p. 270 [17]; s.w.; s.al.

carbothialdine. $C_8H_{10}N_2S_2$; m.w. 162.21; cr.; i.w.; s.al.

-carbothioic. Suffix of organic acids, in which an atom of sulfur replaces an atom of oxygen, where the carboxyl is considered as a substituent.

-carbothiolic. Suffix of organic acids where the oxygen of OH group is replaced by sulfur.

-carbothionic. Suffix of organic acids where the oxygen of the CO group has been replaced by sulfur.

carboxazylic acid. Carboxylic acid amide, e.g. oxamide.

Carboxide. The trade name for a liquefied mixture of ethylene oxide and carbon dioxide, used as a fumigant.

carboxyl group. Group appearing in many organic acids, —COOH.

carboxylase. See decarboxylase.

carboxylic acid. Compound containing the carboxyl group, —COOH.

carbuncle, Al-Fe garnet. See almandite.

carburetted water gas. See water gas, carburetted.

carburization. See carburizing.

carburizing (carburization). Process of combining iron alloys with carbon to produce a hardened surface.

carbylamine (isocyanide, isonitrile). Compound containing the radical, N:C—, e.g. N≡C—C_6H_5, having a highly disagreeable penetrating odor.

carbylamine, butyl-. See butyl isocyanide (n.).

carbylamine chloride, phenyl-. See aniline, N-(dichloromethylene)-.

carbylamine, α, α-(dimethylethyl)-. See tert-butyl isocyanide.

carbylic acid. General designation for carboxylic, carbazylic, or carboxazylic acids.

Carcel unit. Measure of intensity of light source equal to 9.6 International Candles.

cardamom: The fruit from which cardamom oil (q.v.) is obtained.

cardamom oil. See oil, cardamom.

cardinal points. Focal point, principal point, and nodal point of a lens or symmetrical optical instrument.

carding. Treatment of textile fibers preliminary to spinning.

Carey Firefoil. An asbestos laminate insulation board retaining a large proportion of its original strength even after prolonged soaking in water; used in ship construction, oven walls, interior building partitions, insulating linings for stacks.

Carhart-Clark cell. Modified Clark cell (q.v.) having a low temperature coefficient.

carmine. See cochineal.

carminic acid. $C_{22}H_{20}O_{13}$; m.w. 492.16; red. monocl. pr.; s.w.; s.al.

carnallite. A mineral; $KCl \cdot MgCl_2 \cdot 6H_2O$; rhomb., wh., or redsh.; sp.gr. 1.60; hardness 1; see also magnesium potassium chloride.

carnauba wax. See wax, carnauba.

carnaubyl alcohol. $C_{24}H_{50}O$; m.w. 354.39; leaf.; m.p. 69; s.w.; s.al.

carnelian (cornelian). A natural, red quartz.

Carnot cycle. An ideal closed cycle of reversible changes with which the performance of heat engines may be compared; consists of four reversible operations: isothermal and adiabatic expansions followed by isothermal and adiabatic compressions.

Carnot theorems. 1. No heat engine working between two temperatures can have a greater efficiency than a reversible engine working between those temperatures. 2. The efficiency of any reversible heat engine working between two temperatures is independent of the nature of the engine or of the working substance and depends only upon the temperatures.

carnotite. A mineral; $K_2O \cdot 2V_2O_5 \cdot V_2O_5 \cdot 3H_2O$; hex., rhomb., yel.; hardness 1-2; a source of radium and uranium.

Caro's acid. The name for permonosulfuric acid, H_2SO_5; see Caro's reagent.

carob (locust bean). An oil and gum obtained from the endosperm of the locust or carob bean.

carony bark. See angostura bark.

Caro's reagent. A pasty mass of ammonium or potassium persulfate dissolved in sulfuric acid, having great oxidizing power and used in testing alkaloids; see Caro's acid.

carotene. Intensely colored hydrocarbon (lipochrome) of formula $C_{40}H_{56}$ containing 11-13 conjugated double bonds; see α and β forms.

α-carotene (α-carotin). $C_{40}H_{56}$; m.w. 536.44; m.p. 175.

β-carotene (β-carotin). $C_{40}H_{56}$; m.w. 536.44; red-br. glist. cr.; m.p. 181-2; i.w.; s.al.

carotin. See carotene.

carotinoid. Yellow-orange pigment resembling carotin in form or structure only.

d-carpaine. $C_{14}H_{23}NO_2$; m.w. 239.20; monocl. pr.f.al.; m.p. 121; i.w.; s.al.

d-carpaine, hydrochloride. $C_{14}H_{23}NO_2 \cdot HCl$; m.w. 275.67; lng. wh. rhomb. or monocl. need.; s.w.; s.al.

carrageen. See moss, Irish.

Carrel-Dakin's solution. See Dakin's solution.

carrier. Body in or on which catalysts are deposited and which supports the catalyst in a reaction chamber.

Cartier's hydrometer. Hydrometer that floats in water at the 10° scale division

nd corresponds to 32° Bé. at the 30° nark.

ubinose. See d-mannose.

vacrol (2-p-cymenol; cymophenol). $CH_3(C_3H_7)C_6H_3OH$; m.w. 150.11; col. oily liq.; m.p. 0.5; b.p. 237.9; s.w.; s.al.

rvacrol, hexahydro-. See carvomenthol.

rvacrylamine (2-p-cymylamine; 2-amino-p-cymene; 5-isopropyl-2-methylaniline; cymidine). $(CH_3)_2CH(CH_3)C_6H_3NH_2$; m.w. 149.13; oil.; m.p. −16; b.p. 241; s.w.; s.al.

rvene. See d-limonene.

rvenone (3-p-menthen-2-one). $C_{10}H_{16}O$; m.w. 152.12; liq.; b.p. 233; i.w.

rveol, dihydro- (p-menth-8[9]-en-2-ol). $C_{10}H_{17}OH$; m.w. 154.14; liq.; b.p. 225.

rvol. See d-carvone.

rvomenthene (1-p-menthene). $C_{10}H_{18}$; m.w. 138.14; col. oily liq.; b.p. 175; s.al.

rvomenthol (2-p-menthanol; hexahydrocarvacrol). $C_{10}H_{19}OH$; m.w. 156.16; oil.; b.p. 222; s.al.

-carvone (d-6, 8[9]-p-menthadien-2-one; carvol.). $C_{10}H_{14}O$; m.w. 150.11; col. liq.; b.p. 230; s.w.; s.al.

arvone, dihydro- (p-menth-8[9]-en-2-one). $C_{10}H_{16}O$; m.w. 152.12; oily liq.; b.p. 220-1.

l-carvone, oxime (dl-carvoxime). $C_{10}H_{14}$:NOH; m.w. 165.13; monocl. cr.; m.p. 93-4; s.w.; s.al.

l-carvoxime. See dl-carvone, oxime.

aryophillin. $(C_{10}H_{16}O)_3$; m.w. 456.37; silky need.; m.p. 310; i.w.; s.al.

Cascade tube. High voltage vacuum tube for producing hard x-rays or high-speed ion beams.

cascara sagrada. The dried bark of a tree growing in the Rocky Mountains and used in medicine as a cathartic.

cascarilla bark. The dried bark of a tree from the West Indies, used in medicine.

case hardening. Surface hardening of iron or steel by carburization followed by quenching.

casein. The chief protein (phosphoprotein) found in milk, being present as the soluble calcium salt of caseinogen; used in food products, adhesives, paints, molded articles, etc.

casein, vegetable. See legumin.

cashew nut oil. See oil, cashew nut.

casing-head gasoline. See natural gasoline.

cassava. The roots of a tropical plant used to make tapioca, laundry starch, and adhesives; see tapioca starch.

Cassegranian mirror. Convex additional mirror placed in front of concave objective of a reflecting telescope.

Cassel's green. Barium manganate.

Cassela acid. See 2-naphthol-7-sulfonic acid.

cassia oil. See oil, cassia.

cassiterite (tinstone, stream tin, wood tin). A mineral, $SnSnO_4$; tetr., br. or blk., somet. red, gray, wh. or yel.; sp.gr. 6.8-7.1; hardness 6-7; see also tin oxide(ic).

cast iron, gray. Cast iron containing a considerable proportion of graphite; fractured surface has gray color.

cast iron, malleable. White cast iron of special composition heat treated so as to obtain only ferrite and graphite.

cast iron, white. Cast iron in which nearly all the carbon is in a combined state; fracture has a white metallic appearance.

castile soap. See soap, castile.

casting. Forming a material into a shape by pouring it when liquid into a mold.

castor amine. Product used commercially in ore flotation as selective collectors; as insecticide ingredients, textile finishes, rust-proofing metal surfaces.

castor cake. The cake obtained from castor beans after the oil has been expressed; very rich in fertilizer constituents.

castor meal (castor, pomace). Ground castor cake used as a fertilizer.

castor oil. See oil, castor.

castor pomace. See castor cake.

castorite. A natural, colorless silicate of lithium and aluminum.

catabolism. See katabolism.

catalase. Enzyme which decomposes hydrogen peroxide.

Catalin. A phenol-formaldehyde casting resin produced in transparent, translucent, opaque, colored and colorless forms. It can be bent, formed and blanked when heated, is thermosetting, burns with difficulty, and can be obtained in the form of varnishes and lacquers.

catalysis. The acceleration (or retardation) of the speed of a chemical reaction by the presence of a comparatively small amount of a foreign substance which does not alter in quantity or chemical composition during the reaction.

catalysis, heterogeneous. See surface catalysis.

catalysis, negative. See negative catalysis.

catalysis, positive. See positive catalysis.

catalysis, surface. See surface catalysis.

catalyst (catalyzer). Substance which brings about a change in the speed of reaction without itself changing in chemical identity; see catalysis.

catalytic poison. Substance which reduces or destroys efficiency of a catalyst.

catalyzer. See catalyst.

cataphoresis. Migration of colloidal particles toward an electrode under the influence of an electric current.

α-catechin. See d-catechol.

catechol. See also pyrocatechol.

d-catechol (d-catechin; 3, 5, 7, 3′, 4′-flavanpentol [one form]; 2-[3, 4-dihydroxyphenyl]-3, 5, 7-chromantriol [one form]). $C_{15}H_{14}O_6$; m.w. 290.11; wh. cr. powd. or need. f.w.; m.p. 175; s.w.; s.al.

catechol diethyl ether. See benzene, 1, 2-diethoxy-.

catechu gum. See cutch.

catenary. Term applied to the curve of a flexible, non-extensible, thin cord held at each end.

catharometer. Device for measuring rate of flow or change in composition of gases.

cathetometer. Comparing device composed of a horizontal reading telescope or microscope movable along a vertical scale.

cathion. See cation.

cathode (kathode). Negative pole of an electrolytic system.

cathode dark space. Non-luminous portion of glow discharge between cathode glow and negative glow.

cathode drop. Sharp fall of e.m.f. at cathode of an electrolytic cell or vacuum tube.

cathode glow. Luminosity surrounding cathode in low pressure gas discharge tube.

cathode ray. Negatively charged particles emitted by the cathode in a Crookes' tube.

cathode ray oscilloscope. Electronic device which gives a visual image of transient recurrent electrical phenomena.

cathodoluminescence. Luminescence produced by cathode rays.

cathodophosphorescence. Phosphorescence caused by cathode rays.

cathodothermoluminescence. Thermoluminescence caused by some change, other than a temperature rise; produced in a substance exposed to cathode rays.

catholyte (katholyte). Solution surrounding cathode in an electrolytic cell.

cation. Ion which travels to the cathode, a metallic ion.

cation exchange (base exchange). The property of replacement of one metallic ion of a solid by another from solution in water. These exchanges are reversible and are used in water softening processes, such as the permutit process.

cationic soap. Soap in which the positive ion is a long chain and whose negative ion is a halide, sulfate or other anionic group, e.g. cetyl pyridinium bromide.

catoptrics. Study of reflected light.

cat's eye. A variety of quartz containing fine fibers of asbestos.

caul boards. Boards between which veneered work is pressed and held until adhesive "sets."

causality (causation; determinism). There is an actual cause and effect relationship between related phenomena, so that the same conditions will always produce the same results.

causation. See causality.

caustic. Surface enveloping an astigmatic bundle of rays or of normals to wave surface; burning or corroding animal tissue.

caustic embrittlement. Special form of corrosion resulting in cracking of steel, stressed beyond yield point and immersed in hot solutions of chemicals.

caustic potash. See potassium hydroxide.

caustic soda. See sodium hydroxide.

causticized ash. Definite mixtures of soda ash and caustic soda used as cleaners.

cavitation. Formation of partial vacuum in a liquid due to separation of its parts or dissolved gases in flowing.

cayenne oil. See oil, linaloe.

ceara wax. See wax, carnauba.

Cecolene 1. Trichlorethylene.

Cecolene 2. Perchlorethylene.

cedar leaf oil. See oil, cedar leaf.

cedar wood oil. See oil, cedar wood.

cedrarine. See quinazoline, 3, 4-dihydro-3-phenyl-.

cedrene (artificial). $C_{15}H_{24}$; m.w. 204.19; col. liq.; b.p. 262-3.

cedriret. See cerulignone.

cel. Velocity given to one gram by a force of one dyne in one second.

Celanese. An artificial silk made from cellulose acetate.

Celsius scale. Inverted centigrade scale of temperature.

Celeron. Synthetic tar-acid resin.

celery oil. See oil, celery.

celestite (celestine). A mineral, $SrSO_4$; rhomb., col., wh. or yel., oft. blsh., redsh. or grnsh.; sp.gr. 3.84-3.97; hardness 3.0-3.5.

Celluloid. A cellulose nitrate plastic, thermoplastic, obtainable in transparent, translucent, opaque, colored and colorless forms, of good molding properties. It burns very rapidly, is resistant to hydrocarbons and oils.

celestite (celestine). See strontium sulfate.

Celite. A trade name for a hydrated amorphous silica used as a filter-aid.

cell. A bit of protoplasm with a nucleus and which is the fundamental unit of all organisms.

cell constant. The factor by which the observed resistance is multiplied to obtain the specific resistance of the electrolyte.

cell, primary. Device producing electrical energy from chemical energy.

cell, secondary. Device in which electrical energy is tranferred into chemical energy.

Cellite. A cellulose acetate plastic less inflammable than Celluloid.

cellobiose (cellose; glucose β-glucoside). $C_{12}H_{22}O_{11}$; m.w. 342.17; col. need.; m.p. 225; s.w.; s.al.

cellobiose, octaacetate (a) (octaacetylcellobiose). $C_{12}H_{14}O_3(OOCCH_3)_8$; m.w. 678.30; col. silky need.; m.p. 228-9; i.w.; s.al.

Cellophane (Sylphrap). Transparent flexible sheeting consisting of regenerated cellulose plus plasticizers with or without a moisture-proofing coating.

Celloresen. Synthetic tar-acid resin.

cellose. See cellobiose.

Cellosolve. See ethanol, 2-ethoxy-.

Cellosolve acetate. See ethanol, 2-ethoxy-, acetate.

Cellosolve, benzyl. See ethanol, 2-benzyloxy-.

Cellosolve, butyl. See ethanol, 2-butoxy-.

Cellosolve, methyl. See ethanol, 2-methoxy-.

Cellosolve, phenyl. $C_6H_5OC_2H_4OH$. m.w. 138.16; sp.gr. 1.1094; b.p. 245.2; s.w.

cellulase. Enzyme by means of which bacteria hydrolyze cellulose.

Celluloid. A mixture of cellulose nitrate and camphor used to make photographic film, etc.

cellulose. $(C_6H_{10}O_5)_x$; m.w. $(162.08)_x$; wh. amorph.; i.w.; i.al.

cellulose acetate. See cellulose acetate, penta-, tetra-, and tri-.

cellulose acetate rayon. See rayon, acetate.

cellulose, acetate, penta-. $C_6H_5(OOCCH_3)_5$; m.w. 372.16; yelsh. amor.; i.w.; s.al.

cellulose, acetate, tetra-. $C_6H_6O(OOCCH_3)_4$; m.w. 330.14; ylsh. amor.; i.w.; i.al.

cellulose, acetate, tri-. $C_6H_7O_2(OOCCH_3)_3$; m.w. 288.12; ylsh. amor.; i.w.; i.al.

cellulose, hydrated. See hydrated cellulose.

cellulose nitrate. See cellulose tri-, tetra-, penta-, and hexa-nitrates.

cellulose, nitrate, hexa- (chief constituent of guncotton). $C_{12}H_{14}(ONO_2)_6O_4$; m.w. 594.16; wh. amor.; i.w.; i.al.

cellulose, nitrate, penta-. $C_{12}H_{15}(ONO_2)_5O_5$; m.w. 549.16; wh. amor.; i.w.; i.al.

cellulose, nitrate, tetra- (constituent of collodion). $C_{12}H_{16}(ONO_2)_4O_6$; m.w. 504.16; wh. amor.; i.w.; i.al.

cellulose, nitrate, tri- (constituent of collodion). $C_{12}H_{17}(ONO_2)_3O_7$; m.w. 459.16; wh. amor.; i.w.; s.al.

cellulose nitroacetate. Protective coating base; non-inflammable; used in finishing textiles; as a protective coating, and in molding plastics.

cellulose xanthate. A substance obtained by treating cellulose with sodium hydroxide and carbon disulfide, used to make rayon.

Celotex. An artificial building-board made from bagasse (q.v.).

cement. A mixture of calcium aluminates and silicates made by combining lime and clay.

cement factor. Quantity of cement per cubic yard of concrete.

cement, Keene's. See Keene's cement.

cement, natural. Material formed by calcining a naturally occurring mixture of lime and clay at a temperature below sintering point.

cement, neat. See neat cement.

cement, Portland. A product obtained from pulverized clinker consisting essentially of calcium and aluminum silicates to which water and untreated calcium sulfate may be added; composition is lime (CaO) 61, silica (SiO_2) 22, alumina (Al_2O_3) 7, and magnesium oxide (MgO).

cement rock (argillaceous limestone). Limestone containing at least 18% clay.

cement, Sorel. See magnesium oxychloride.

cementation. Method of heating wrought iron in closed containers with charcoal to form steel.

cementite. Iron carbon alloy in unhardened steel.

cent. Musical interval or ratio between frequencies whose value is the 1200th root of 2.

center, instantaneous. See instantaneous center.

center of acceleration. A point in a plane body, moving in its plane, having a momentary acceleration of zero.

center of area. That point in a plane figure corresponding to center of mass of an infinitely thin, uniform plate

having boundaries coincident with those of the plane figure.

center of buoyancy. See center of displacement.

center of collineation. Point thru which all straight lines pass joining conjugate points of a spherical refracting surface or of a thin lens.

center of displacement (center of buoyancy). Point which coincides with center of mass of the volume of fluid displaced by partially or wholly submerged body.

center of figure. Point of any three dimensional space figure which coincides with center of mass of a body of homogeneous material.

center of gravity (center of mass; center of inertia; centroid). The point in a body where a body acts as tho all its mass were concentrated; the point about which all the parts of a body exactly balance each other.

center of inertia. See center of gravity.

center of mass. See center of gravity.

center of oscillation. The point of a body suspended by an axis, at which, if all the mass were concentrated, the oscillations would be performed in the same time.

center of percussion. The point at which, if a moving body encountered an immovable body, the motion would be stopped without producing any strain on the axis; coincided with center of oscillation when body moves about a fixed point.

center of pressure. Point of application of single resultant force to which the effect of the pressure is equivalent.

center of suspension. One of two conjugate points of a gravity pendulum, of which the other is the center of oscillation.

centi-. Prefix meaning $\frac{1}{100}$th.

centigrade. A temperate scale in which the freezing point of water is regarded as 0° and the boiling point 100° and whose scale is divided into hundredth.

centigram (cg.). $\frac{1}{100}$th of a gram.

centimeter. $\frac{1}{100}$th of a meter.

centipoise. A $\frac{1}{100}$th of a poise (q.v.).

centistoke. Kinematic viscosity unit corresponding to centipoise; 0.01 stoke.

central orbit. Orbit travelled by a body influenced by a force directed toward a fixed center.

centrifugal force. Kinetic reaction exerted by a body moving in a fixed curved path, due to inertia; outward force of a mass in circular motion; equal and opposite in direction to centripetal force.

centrifugal stress. Centrifugal tension divided by area of cross-section.

centrifuge. An apparatus using centrifugal force for separating solids from liquids or liquids of markedly different specific gravities.

centripetal force. Force which makes a moving body travel along a curve rather than a straight line; force directed inward toward the center of the circular path, equal and opposite in direction to centrifugal force.

centrobaric (baricentric). Possessing a true center of gravity.

centrode. Curve formed by instantaneous center of a plane body moving, in its own plane, in any fashion.

centroid. See center of gravity.

centroid diagram. Chart showing relationship of atomic electron energy levels in successive elements.

centrosome. A small deeply staining granule located at the center of the centrosphere or attraction-sphere.

cephaelis. See ipecacuanha.

cephalin. See kephalin.

cera wax. See wax, carnauba.

ceramics. Products composed of earthy materials and which are either made or used at temperatures above 550° C.; a generic term for all types of pottery, burnt clay products and glass.

cerane (isohexacosane). $C_{26}H_{54}$; m.w. 366.42; cr.f.et.; m.p. 61; b.p. 207 $^{0.7}$; i.w.; s.al.

cerargyrite (horn silver). A mineral, AgCl; cub. wh., gray, yelsh., grnsh., turns vlt., br. or blk in light; sp.gr. 5.552; hardness 1-1.5.

cerate. A hard ointment containing wax.

cerebrine. Brain-matter, consisting of 80-90% water, phosphatides, and galactosides in a colloidal mass.

cerebroside. Component of brain and nerve tissues. See galactolipin.

Cerelose. A commercial glucose.

ceresin wax. See wax, ceresin.

ceric. See corresponding cerium compound.

cerite. A mineral containing cerium, and other rare earths.

cerium. Ce; at. wt. 140.13; at. no. 58; cub. or hex.; s.g. cub. 6.90, hex. 6.7; m.p. 640; b.p. 1400; i.w.; i.al.; valence 3 or 4; a metallic element, steel-gray, lustrous; found in the rare minerals orthite, cerite and samarskite; prepared by electrolysis of the chloride; used as a pyrophoric alloy with iron, giving off showers of sparks when struck, and as the oxide as a constituent of gas mantles.

cerium acetate (ous). $Ce(C_2H_3O_2)_3 \cdot 1\frac{1}{2}H_2O$; m.w. 344.22; wh.-redsh. cr. powd.; m.p. $-1\frac{1}{2}H_2O$, 115; s.w.

cerium acetylacetonate(ous). $Ce(CH_3COCHCOCH_3)_3 \cdot 3H_2O$; m.w. 491.34; lt. yel. cr. ppt.; m.p. 131-132; s.al.

cerium ammonium nitrate (ic). $Ce(NH_4)_2(NO_3)_6$; m.w. 548.26; monocl. yel.-red; s.w.; s.al.

cerium ammonium nitrate (ous). $Ce(NO_3)_3 \cdot 2NH_4NO_3 \cdot 4H_2O$; m.w. 558.31; monocl.; m.p. 74; s.w.

cerium ammonium sulfate (ous). $Ce_2(SO_4)_3(NH_4)_2SO_4 \cdot 8H_2O$; m.w. 844.70; monocl.; s.g. 2.523; m.p. $-6H_2O$ 100, $-8H_2O$ 150.

cerium benzoate (ous). $Ce(C_7H_5O_2)_3 \cdot 3H_2O$; m.w. 557.29; wh. to redsh.-wh. powd.; s. hot. al.

cerium bromate (ous). $Ce(BrO_3)_3 \cdot 9H_2O$; m.w. 686.02; hex. redsh. wh.; m.p. 49; s.w.

cerium bromide (ous). $CeBr_3$; m.w. 379.88; wh. cr. powd., deliq.; s.w.

cerium bromide (ous) (hydrated). $CeBr_3 \cdot H_2O$; m.w. 397.89; need., deliq.; s.w.; s.al.

cerium carbide. CeC_2; m.w. 164.13; hex. red.; s.g. 5.23.

cerium carbonate (ous). $Ce_2(CO_3)_3 \cdot 5H_2O$; m.w. 550.34; micr. pr. wh.; s.w.

cerium chlorate, per-, hexaantipyrine (ous). $[Ce(COC_{13}H_{12}N_2)_6(ClO_4)_3]$; m.w. 2215.16 col. hex. cr.; m.p. 295-300 d.; s.w.

cerium chloride (ous). $CeCl_3$; m.w. 246.50; col. cr., deliq.; s.g. 3.92^{20}; m.p. 848; s.w.; s.al.

cerium citrate (ous). $Ce(C_6H_5O_7) \cdot 3\frac{1}{2}H_2O$; m.w. 392.22; wh. powd.; i.w.

cerium fluoride (ic). $CeF_4 \cdot H_2O$; m.w. 234.15; wh. amor. powd.; i.w.

cerium fluoride (ous) (fluocerite). CeF_3; m.w. 197.13; hex. wh.; 6.16; m.p. 1324; i.w.

cerium hydride (ous). CeH_3; m.w. 143.15; amor. powd., dk. bl.

cerium hydroxide (ic). $Ce(OH)_4$; m.w. 208.16; yelsh. gelat. ppt.

cerium hydroxide (ous). $Ce(OH)_3$; m.w. 191.15; wh. gelat. ppt.

cerium iodate. $Ce(IO_3)_4$; m.w. 839.81; col.

cerium iodide (ous). $CeI_3 \cdot 9H_2O$; m.w. 683.03; redsh.-wh. cr.; s.w.; s.al.

cerium iodide (ous), hexaantipyrine. $[Ce(COC_{13}H_{12}N_2)_6I_3]$; m.w. 2297.55; large yel. cr.; m.p. 268-70; s.w.

cerium nitrate (ic). $Ce(NO_3)_4$; m.w. 388.16; redsh. yel., deliq.; s.w.; s.al.

cerium nitrate (ous). $Ce(NO_3)_3 \cdot 6H_2O$; m.w. 434.25; col. or redsh. cr., deliq.; m.p. $-3H_2O$ 150; s.w.; s.al.

cerium nitrate (ic), basic. $Ce(NO_3)_3OH \cdot 3H_2O$; m.w. 397.21; long red need.; s.w.

cerium oxalate (ous). $Ce_2(C_2O_4)_3 \cdot 9H_2O$; m.w. 706.40; yel.-wh. cr.; s.w.; i.al.

cerium oxide (ic). CeO_2; m.w. 172.13; cub. wh.-yel. or amor.; s.g. 7.3; m.p. 1950; i.w.

cerium oxide (ous). Ce_2O_3; m.w. 328.26; gray-grn. powd.; s.g. 6.9-7.0; i.w.

cerium oxide, di-. See cerium oxide (ic).

cerium oxychloride (ous). CeOCl; m.w. 191.59; purp. leaf.; i.w.

cerium phosphate, meta- (ous). $Ce(PO_3)_3$; m.w. 377.19; micr. need.; s.g. 3.723.

cerium phosphate, ortho- (ous) (monazite). $CePO_4$; m.w. 235.15; monocl. red. or rhomb. yel.; s.g. 5.22; i.w.; i.al.

cerium platinocyanide (ous). $CePt_3(CN)_{12} \cdot 18H_2O$; m.w. 1502.33; monocl. yel. bl. lust.; s.g. 2.657.

cerium salicylate (ous). $Ce(C_7H_5O_3)_3$; m.w. 551.25; wh. to redsh.-wh. powd.; i.w.

cerium silicide (ic). $CeSi_2$; m.w. 196.25; s.g. 5.67 ^{17}; i.w.

cerium sulfate (ic). $Ce(SO_4)_2$; m.w. 332.25; deep yel. cryst.; s.g. 3.91 ^{15}.

cerium sulfate (ic) (hydrated). $Ce(SO_4)_2 \cdot 4H_2O$; m.w. 404.31; rhomb. sulf. yel.

cerium sulfate (ous). $Ce_2(SO_4)_3$; m.w. 568.44; monocl. or rhomb. col., grn. powd., hyg.; s.g. 3.912; s.w.

cerium sulfate (ous) (hydrated). $Ce_2(SO_4)_3 \cdot 4H_2O$; m.w. 640.50; rhomb. asbestos like need. ($5H_2O$ monocl.); s.g. 3.22 ($5H_2O$).
$Ce_2(SO_4)_3 \cdot 8H_2O$; m.w. 712.56; tricl. or monocl. sm. pink cr.; s.g. 2.886 ^{17}; m.p. $-8H_2O$, 630; s.w.
$Ce_2(SO_4)_3 \cdot 9H_2O$; m.w. 730.57; asbestos like need.; hex. cr.; s.g. 2,831; s.w.

cerium sulfide. Ce_2S_3; m.w. 376.44; red. cr., br.-dk. purp. powd.; s.g. 5.020 ^{11}; i.w.

cerium valerate (ous). $Ce_3(C_5H_9O_2)_9 \cdot 5H_2O$; m.w. 976.76; wh. to redsh.-wh. powd.; s.w.

Cerol S. Paraffin wax emulsion; textile waterproofing.

cerotic acid (hexacosanoic acid). $CH_3(CH_2)_{24}COOH$; m.w. 396.41; col. need. f.al.; m.p. 87.7; i.w.; s.al.

cerotin. See ceryl alcohol.

cerous. See corresponding cerium compound.

cerulean blue. A light blue pigment made from copper sulfate, tin oxide, and chalk.

cerulignone (3, 3', 5, 5'-tetramethoxydiphenoquinone; coerulignone; cedriret). $C_{16}H_{16}O_6$; m.w. 304.12; bluish gr. need.; i.w.; i.al.

cerussite (white lead ore). A mineral, $PbCO_3$; rhomb., col., wh. or gray; sp.gr. 6.46-6.57; hardness 3.0-3.5.

ceryl alcohol (1-hexacosanol; cerotin; n-hexacosyl alcohol). $CH_3(CH_2)_{24}CH_2OH$; m.w. 382.42; col. rhomb. pl.; m.p. 79-81; i.w.; s.al.

cesium. Cs; m.w. 132.91; hex.; s.g. 1.90; m.p. 28.5; b.p. 670; s.al.; valence 1; one of the alkali metals, silvery-white, ductile; prepared by electrolysis of the fused cyanide; characterized by two bright blue lines in its spectrum; used as a "getter" in radio tubes because of its great affinity for oxygen, also as catalyst in hydrogenation of certain organic compounds; chief compounds are the chloride and nitrate.

cesium acetate. $CsC_2H_3O_2$; m.w. 191.83; deliq.; m.p. 194; s.w.

cesium aurate, chloro-. $CsAuCl_4$; m.w. 471.84; s.w.; s.al.

cesium benzoate. $Cs(C_7H_5O_2)$; m.w. 253.85 s.w.

cesium bromate. $CsBrO_3$; m.w. 260.73.

cesium bromide. CsBr; m.w. 212.73; cub. col.; s.g. 4.44, liq. 3.04 ^{700}; m.p. 636; b.p. 1300; s.w.

cesium bromide, chlorodi-. $CsBr_2Cl$; m.w. 328.10; yellow; m.p. 191.

cesium bromide, dichloro-. $CsBrCl_2$; m.w. 283.64; m.p. 205.

cesium bromide, diiodo-. $CsBrI_2$; m.w. 466.57; m.w. 195.5; s.al.

cesium bromide, tri-. $CsBr_3$; m.w. 372.56; rhomb.; m.p. 180.

cesium carbonate. Cs_2CO_3; m.w. 325.8; col. cr., deliq.; s.w.; s.al.

cesium carbonate, acid. $CsHCO_3$; m.w. 193.82; rhomb.; m.p. $-\frac{1}{2}CO_2$ 17[illegible]; s.w.; s.al.

cesium chlorate. $CsClO_3$; m.w. 216.27; s.g. 3.57; s.w.; s.al.

cesium chlorate, per-. $CsClO_4$; m.w. 232.27; rhomb. col.; s.g. 3.327; s.w.

cesium chloride. CsCl; m.w. 168.27; cub. col., deliq.; s.g. 3.97; m.p. 646; s.w.; s.al.

cesium chloroaurate. See cesium aurate, chloro-.

cesium chloroplatinate. See cesium platinate, chloro-.

cesium chlorostannate. See cesium stannate, chloro-.

cesium chromate. Cs_2CrO_4; m.w. 381.63; s.g. 4.237; s.w.

cesium cyanide. CsCN; m.w. 158.82; col. cr.; s.w.; i.al.

cesium fluoride. CsF; m.w. 151.81; cub. col.; s.g. 3.586; m.p. 684; b.p. 1250; s.w.; i.al.

cesium fluoride (hydrated). $CsF \cdot \frac{1}{2}H_2O$; m.w. 178.83; s.w.

cesium fluosilicate. Cs_2SiF_6; m.w. 407.68; cub. wh.; s.g. 3.372 ^{17}; s.w.; i.al.

cesium formate. $CsCHO_2$; m.w. 177.82; m.p. 265; s.w.

cesium formate. $CsCHO_2 \cdot H_2O$; m.w. 195.83; m.p. $-H_2O$, 41; s.w.

cesium hydride. CsH; m.w. 133.82; wh. cr.; s.g. 2.7.

cesium hydroxide. CsOH; m.w. 149.82; col.-yelsh., v. deliq.; s.g. 3.675; m.p. 272.3; s.w.; s.al.

cesium iodate. $CsIO_3$; m.w. 307.73; monocl. wh.; s.g. 4.85.

cesium iodate, per-. $CsIO_4$; m.w. 323.73; rhomb. wh. pl.; s.g. 4.259.

cesium iodide. CsI; m.w. 259.73; cub. col.; s.g. 4.510; m.p. 621; b.p. 1280; s.w.; s.al.

cesium iodide, chlorobromo-. CsIBrCl; m.w. 375.10; rhomb. yel.-red.; m.p. 235.

cesium iodide, dibromo-. $CsIBr_2$; m.w. 419.56; rhomb.; m.p. 248.

cesium iodide, dichloro-. $CsICl_2$; m.w. 330.64; rhomb. pa. or.; s.g. 3.86; m.p. 230.

cesium iodide, penta-. CsI_5; m.w. 767.41; tricl. blk.; m.p. 73.

cesium iodide, tri-. CsI_3; m.w. 513.57; rhomb. blk.; m.p. 207.5; s.w.

cesium manganate, per-. $CsMnO_4$; m.w. 251.74; s.g. 3.597.

cesium mercuric bromide. $CsBr \cdot 2HgBr_2$; m.w. 933.61; s.al.

cesium mercuric chloride. $CsCl \cdot HgCl_2$; m.w. 439.79; cub. or rhomb. col.

cesium nitrate. $CsNO_3$; m.w. 194.82; col. hex. or cub., glit.; s.g. 3.685; lq. 2.71 ^{800}; m.w. 414; s.w.; s.al.

cesium nitrate, dihydro-. $CsNO_3 \cdot 2HNO_3$; m.w. 320.85; col. plates; m.p. 32-36.

cesium nitrate, hydro-. $CsNO_3 \cdot HNO_3$; m.w. 357.83; oct.; m.p. 100.

cesium nitrite. $CsNO_2$; m.w. 178.82; yel. cryst.; s.w.

cesium oxalate. $Cs_2C_2O_4$; m.w. 353.62; s.w.

cesium oxide, di-. Cs_2O_2; m.w. 297.62; pa. yel. need.; s.g. 4.25; m.p. 400; b.p. $-O_2$ 650; s.w.

cesium oxide, mon-. Cs_2O; m.w. 281.62; or.-red. cr.; s.g. 4.36; s.w.

cesium oxide, tetr-. Cs_2O_4; m.w. 329.62; yel. cryst.; s.g. 3.77 ^{19}; m.p. 600.

cesium oxide, tri-. Cs_2O_3; m.w. 313.62; choc. br. cr.; s.g. 4.25°; m.p. 400.

cesium phthalate, acid. $CsHC_8H_4O_4$; m.w. 297.85; rhomb.; s.g. 2.178.

cesium platinate, chloro-. Cs_2PtCl_6; m.w. 673.59; cub. yel.; i.al.

cesium salicylate. $CsC_7H_5O_3$; m.w. 269.85; s.w

um silicotungstate. $Cs_8SiW_{12}O_{48}$; w. 3970.54; wh. cr.; i.al.

um stannate, chloro-. Cs_2SnCl_6; w. 597.06; cub. wh.; s.g. 3.33.

um sulfate. Cs_2SO_4; m.w. 361.88; omb. or hex. col.; s.g. 4.243; m.p. 010; s.w.; i.al.

ium sulfate, acid. $CsHSO_4$; m.w. 29.88; rhomb. col. pr.; s.g. 3.352 ^{16}; w.

ium sulfide. $Cs_2S \cdot 4H_2O$; m.w. 369.74; vh. cr., deliq.; s.w.

ium sulfide, di-. Cs_2S_2; m.w. 329.74; mor., dk. red.; m.p. 460; b.p. >800.

ium sulfide, di- (hydrated). $Cs_2S_2 \cdot H_2O$; m.w. 347.76; tetr.; s.w.

ium sulfide, hexa-. Cs_2S_6; m.w. 457.98; brown-red; m.p. 186.

ium sulfide, penta-. Cs_2S_5; m.w. 425.92; s.g. 2.806 ^{16}; m.p. 210.

ium sulfide, tetra-. Cs_2S_4; m.w. 393.86; yel.

ium sulfide, tri-. Cs_2S_3; m.w. 361.80; yel. leaf.; m.p. 217; b.p. 780.

ium tartrate, acid. $CsHC_4H_4O_6$; m.w. 281.85; wh. rhomb. cr.; s.w.

ium tartrate, dihydroxy-. $Cs_2C_4H_4O_6 \cdot 2H_2O$; m.w. 481.68; s.w.

ium tungstate, silico-. See cesium silicotungstate.

tane. See hexadecane.

tane number. Per cent. of cetane in a blend of cetane and alpha-methyl naphthalene which has the same ignition quality (measured in a specified engine under definite conditions) as the fuel being tested.

tyl alcohol (1-hexadecanol; n-hexadecyl alcohol; ethal). $CH_3(CH_2)_{15}OH$; m.w. 242.27; leaf. f.al.; m.p. 49.3; b.p. 190 ^{15}; i.w.; s.al.

tyl alcohol, acetate. See acetic acid, cetyl ester.

tyl cyanide. See margaronitrile.

tylene. See 2-hexadecyne.

tyl ether (1-hexadecyloxyhexadecane; hexadecyl ether; dicetyl ether). $(C_{16}H_{33})_2O$; m.w. 466.51; leaf.; m.p. 55; s.w.; s.al.

tyl iodide (1-iodohexadecane, n-hexadecyl iodide). $CH_3(CH_2)_{14}CH_2I$; m.w. 352.18; leaf. f.al.; sp.gr. 1.123; m.p. 22; b.p. 211 ^{15}; i.w.; s.al.

tyl sulfate (hexadecyl sulfate; di-n-hexadecyl sulfate). $[CH_3(CH_2)_{15}]_2SO_4$; m.w. 546.47; m.p. 66.2-6.3.

evadine. See veratrine (crystalline).

evitamic acid. See ascorbic acid.

eyssatite. See infusorial earth.

habazite. A mineral, $CaAl_2Si_6O_{16} \cdot 8$(+Na, K); hex. (rhbdr.), col., wh., redsh., yelsh., or br.; sp.gr. 2.06-2.16; hardness 4-5.

Chadwick-Goldhaber effect. Dissociation of an atomic nucleus due to absorption of gamma rays.

halcanthite (blue vitriol; bluestone). A mineral, $CuSO_4 \cdot 5H_2O$; tricl., bl. or grnsh. bl.; sp.gr. 2.12-2.30; hardness 2.5.

halcedony (flint; agate). A mineral, SiO_2; wh., grayish bl., br.-blk.; sp.gr. 2.55-2.63; hardness 6.

halcopyrite (copper pyrites). A mineral, $CuFeS_2$; tetr., brass to gold. yel. tarn. to bl., purp. tints; sp.gr. 4.1-4.3; hardness 3.5-4.0.

hanneled spectrum. Spectrum showing interference bands caused by light reflected from two parallel surfaces.

haracteristic equation. Equation connecting variables defining physical states of a body.

haracteristic function. Optical length of a ray in an optical device in terms of a function of the co-ordinates of its end points.

haracteristic surface. Three dimensional graph of a characteristic equation.

hain, closed (ring; cyclic). Class of organic compounds where two end carbon atoms are joined directly or thru another atom, e.g. benzene,

chain compound. Organic compound containing carbon to carbon linkages, e.g. propane $H_3C—C—CH_3$ (H_2).

chain, open. Organic compound whose carbon atoms do not form a closed ring; e.g. propane $H_3C—C—CH_3$ (H_2).

chalcanthite. See copper sulfate (ic).

chalcedony. A variety of quartz.

chalcocite. See copper sulfide(ous).

chalcone (benzalacetophenone; benzylideneacetophenone; phenyl styryl ketone; 1, 3-diphenyl-2-propen-1-one). $C_6H_5CH{:}CHCOC_6H_5$; m.w. 208.09; pa. yel. rhomb. pl.; m.p. 62; b.p. 348; i.w.; s.al.

chalcophanite. A natural hydrated manganese and zinc oxide.

chalcopyrite. A mineral, $CuFeS_2$; the most important copper ore; tetragonal; yellow; sp.gr. 4.2; hardness 3.5.

chalk. A natural calcium carbonate.

chalk, drop. See chalk, prepared.

chalk, prepared. A very fine, white calcium carbonate used in medicine and in tooth powders.

chalking. See powdering.

chalkone. Substitution product of benzalacetophenone.

chalybeate water. Water containing from 0.03 to 0.15% of ferrous carbonate.

chalybite. See siderite.

chamber acid. Sulfuric acid made by the chamber process.

chamber crystals. See nitrosyl sulfuric acid.

chamomile. Flower-head from which an essential oil, used in medicine, is obtained.

change, chemical. See chemical change.

change, physical. See physical change.

change, process. A generic term for alterations in weight or dimension, such as gain or loss in weight, shrinkage and stretch, undergone by a fabric, fiber, or yarn subjected to a particular process.

change ratio. See conversion factor.

channel point or test. Lowest temperature at which a lubricant will flow when chilled, without disturbance, after aeration, under definite prescribed conditions.

characteristic. In a logarithm, such as 3.4082, the whole number, or part preceding the decimal point, in this case the '3'.

characteristic energy. See proper energy.

characteristic number. See eigen value.

charcoal. A substance obtained by the dry distillation of wood and used as a decolorizing agent, as a component of gun powder, etc.

charcoal, animal. See animal charcoal.

charcoal iron. High quality iron free from sulfur.

charge, electronic. See elementary charge.

charge, elementary. See elementary charge.

charge-mass ratio. Ratio of charge of electrified particle or ion to its mass; expressed usually as e/m.

Chattock gauge. Differential manometer employing pressure difference of two columns of liquid of nearly equal density.

Charles' law for gases (Gay-Lussac's law). At a constant pressure, the volume of a given quantity of any gas increases about $\frac{1}{273}$ of its volume at 0° C. for each rise of 1° C. and at constant volume, the pressure of a given quantity of any gas increases about $\frac{1}{273}$ of the pressure for each rise of 1° C. in temperature.

Charlton white. See lithopone.

chaser. Mill used for grinding stiff pasty materials.

chaulmoogra oil. See oil, chaulmoogra.

d-chaulmoogric acid (d-13-[2-cyclopentenyl] tridecanoic acid). CH=CH-$CH_2CH_2CH(CH_2)_{12}COOH$; m.w. 280.25; col. leaf. f.al.; m.p. 68.5; b.p. 247-8 ^{20}; i.w.; s.al.

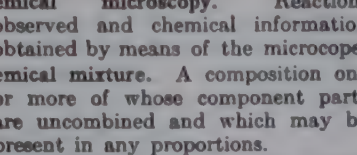
chavibetol (5-allylguaiacol; betel phenol). $CH_2{:}CHCH_2C_6H_3(OH)(OCH_3)$; m.w. 164.09; m.p. 8.5; b.p. 254-5; i.w.; s.al.

chavicol (p-allylphenol). $CH_2{:}CHCH_2C_6H_4OH$; m.w. 134.08; liq.; m.p. >−25; b.p. 237; s.w.; s.al.

chavicol, methyl ether. See estragole.

checking. Surface cracking of paints and films produced by exposure to elements, especially sunshine.

chelate compound (inner complex compound). Compound where the same molecule is attached to a central atom at two different points, forming a ring structure, at least one such attachment being a coordinate linkage; e.g. beryllium benzoyl pyruvate,



chelerythrine, alcoholate. $C_{21}H_{19}NO_5 \cdot C_2H_6O$; m.w. 411.20; rhbdr. leaf.; sol. bl. fluores.; m.p. 207; s.w.; s.al.

d-chelidonine. $C_{20}H_{19}NO_5 \cdot H_2O$; m.w. 371.17; monocl. tab.; m.p. 135-6; i.w.; s.al.

chelidonine, hydrochloride. $C_{20}H_{19}NO_5 \cdot HCl$; m.w. 389.62; wh. fine cr.; i.w.; s.al.

Chemic. Chlorinated lime.

chemical change. A change in which one or more materials change into one or more chemically different materials; a rearrangent of elements, atoms or molecules into chemically different identities.

chemical compound. See compound, chemical.

chemical equation. A symbolic representation of a chemical reaction showing the weight relationships between the reacting substances and the products, e.g. zinc + hydrochloric acid yield zinc sulfate and hydrogen or in symbols: $Zn + 2HCl \rightarrow ZnCl_2 + H_2$.

chemical equivalent. Atomic weight of an element divided by its valence; the weight of an element or radical that will combine with or displace 8 parts by weight of oxygen or 1 part by weight of hydrogen; the molecular weight of a salt divided by the valence of the particular element involved in its use; in oxidizing of reducing agents the molecular weight divided by the total valence or electron change involved in the reaction.

chemical microscopy. Reactions observed and chemical information obtained by means of the microcope.

chemical mixture. A composition one or more of whose component parts are uncombined and which may be present in any proportions.

chemical reaction. See reaction, chemical.

chemical, synthetic. See synthetic chemical.

chemical union. Combination of simpler substances to form a more complex one, e.g. iron and sulfur to form iron sulfide upon heating strongly.

chemically pure (C.P.). Pertaining to a chemical compound or element which has been purified to the extent necessary for fine chemical work for its particular uses.

chemicoluminescence. See chemiluminescence.

chemiluminescence (chemicoluminescence). Light emitted as the result of chemical reaction.

chemistry. Science which deals with the composition of materials and the fundamental changes which they may undergo.

chemistry, physical. See physical chemistry.

chemistry, physiology. See biochemistry.

chemistry, space. See steriochemistry.

chemoanalytic. Breaking down of complex compounds releasing energy.

chemosynthetic. Synthetic reactions utilizing energy from chemical changes.

chemotaxis. Attraction of bacteria by certain chemicals.

chemotherapy. The administration of special classes of chemical compounds for killing protozoa and similar parasites within the body of a higher animal.

cherbulinic acid. Tannin present in myrobalams.

cherry kernel oil. See oil, cherry kernel.

chert. A mineral related to chalcedony. The term is also applied to any impure flinty rock.

chessylite. See azurite.

chestnut extract. An extract of the wood of the Spanish chestnut, containing tannin and used for tanning and dyeing.

chiasma. Visible change of pairing affecting two out of the four chromatids in a bivalent at meiosis.

Chicago acid (SS acid; 1-amino-8-naphthol-2, 4-disulfonic acid). $C_{10}H_5(NH_2)(OH)(SO_3H)_2$ 1:8:2:4; gray paste.; s.w.; mfr. azo dyes.

chicle, gum. See gum, chicle.

chicory. A dried, roasted, and ground root used for mixing with coffee.

Chile saltpeter. See soda niter.

China clay. See kaolinite.

China grass. See ramie.

China oil. See Peru balsam.

China wood oil. See oil, China wood.

chinalgen. See analgen.

Chinese bean oil. See oil, soybean.

Chinese blue. A term used for several mixtures such as ultramarine and flake white, or cobalt blue and white lead.

Chinese grass. See ramie.

Chinese insect wax. See wax, Chinese insect.

Chinese oil. See oil, cassia.

Chinese red. See lead chromate.

Chinese wax. See wax, Chinese.

chinosol. See quinosol.

chiolite. A mineral, $5NaF \cdot 3AlF_3$; tetr. wh.; sp.gr. 2.84-3.005, hardness 3.5-4.

chip board. Board made from woodpulp, chips, and paper used in book covers and cartons.

chitin. $(C_{32}H_{54}O_{21}N_4)$; a nitrogenous tetrasaccharide constituting most important skeletal matter of invertebrates.

Chladni plate. Metal plate which, during vibration, shows nodal lines in various symmetrical patterns.

chloracetic acid. See acetic acid, chloro-.

chloracetophenone. See acetophenone, ω-chloro-.

chloracetyl chloride. See acetyl chloride, chlor-.

chloral (trichloroethanal; trichloroacetaldehyde). CCl_3CHO; m.w. 147.38; col. liq.; m.p. −57.5; b.p. 98; s.w.; s.al.

chloral, alcoholate (2, 2, 2-trichloro-1-ethoxyethanol; chloral hydrate monoethyl acetal). $CCl_3CH(OH)OC_2H_5$; m.w. 193.43; col. need.; m.p. 44-7; b.p. 115; s.w.; s.al.

chloral, antipyrine. See hypnal.

chloral, diethyl acetal. See ethane, 1, 1, 1-trichloro-2, 2-diethoxy-.

chloral glucose. See glucochloralose.

chloral hydrate (2, 2, 2-trichloro-1, 1-ethanediol; trichloroethylidene glycol). $CCl_3CH(OH)_2$; m.w. 165.39; col. monocl. tab.; m.p. 51.7; b.p. 96.3 ^{764}; s.w.; s.al.

Chloramine-T (sodium p-toluene sulfochloramide). $CH_3C_6H_4SO_2NClNa \cdot 3H_2O$; an antiseptic prepared from p-toluene sulfamide and sodium hypochlorite solution; chlorinating and oxidizing agent.

chloramyl amylamine. See amylamine, amyl chloro-.

chloranil (tetrachloroquinone; tetrachloro-p-benzoquinone). $C_6Cl_4O_2$; m.w. 245.83; yel. monocl. pr.f.bz.; m.p. 290; i.w.; s.al.

chloranilic acid (2, 5-dichloro-3, 6-dihydroxyquinone). $C_6Cl_2(OH)_2O_2$; m.w. 208.93; red. leaf.; m.p. 283-4; s.w.

m-chloraniline. See aniline, m-chloro-.
p-chloraniline. See aniline, p-chloro-.
chlorargyrite. A mineral consisting of silver chloride.
Chlorasol. Mixture of carbon tetrachloride and ethylene dichloride.
chlorate. Salt of chloric acid, e.g. potassium chlorate $KClO_3$.
chlorate of potash. See potassium chlorate.
chlorate, per-. Salt of perchloric acid, e.g. potassium perchlorate, $KClO_4$.
chlorbenzene. See benzene, chloro-.
chlorbutanol. See chloretone.
chlorbutol. See chloretone.
Chlorcosane. A chlorinated paraffine; light yellow oil; used as a solvent.
chlorethane. See ethyl chloride.
chloretone (1, 1, 1-trichloro-2-methyl-2-propanol; trichloro-tert-butyl alcohol; acetone-chloroform; chlorbutol; chlorbutanol). $(CH_3)_2C(OH)\text{-}CCl_3$; m.w. 177.43; wh. cr. $(+1H_2O)$ f.w.; m.p. $+1H_2O$, 80-1 (anh. 97); b.p. 167; i.w.; s.al.
Chlorex. See ether, bis-β-chloroethyl-.
chlorhydrin. See 1, 2-propanediol, 3-chloro-.
chloric acid. $HClO_3 \cdot 7H_2O$(?); m.w. 210.57; known only as col. soln.; s.g. $1.282^{14.2}$; m.p. < -20; s.w.
chloric acid, per-. $HClO_4$; m.w. 100.46; col. unst. liq.; s.g. 1.764^{22}; m.p. -112; b.p. 39^{16}; s.w.
chloric acid, per- (hydrated). $HClO_4 \cdot H_2O$; m.w. 118.48; need., fairly stable; s.g. 1.88; lq. 1.776^{80}; m.p. 50; s.w. $HClO_4 \cdot 2H_2O$; m.w. 136.50; stable, liq.; s.g. 1.65; m.p. -17.8; b.p. 200; s.w.; s.al.
chloride. Salt of hydrochloric acid, e.g. potassium chloride, KCl.
chloride of lime. See calcium chlorohypochlorite.
chlorinated lime. See calcium chlorohypochlorite.
chlorination. Process of introducing chlorine into an organic compound or into a liquid.
chlorine. Cl; at. wt. 35.457; at. no. 17; m.p. -101.6; b.p. -34.6; d. 3.214 g/l; sp.gr. 1.56 $(-33.6°)$; valence 1, 3, 5 or 7; a gaseous element, one of the halogen series; found in nature only in combined form, chiefly as chlorides of potassium and sodium and in carnallite; yellowish-green; poisonous; soluble in water; prepared by electrolysis or oxidation of its compounds; used in bleaching, preparation of bleaching agents and purification of water.
chlorine azide (chloroazide). ClN_3; m.w. 77.48; gas.; s.w.
chlorine cyanide. See cyanogen chloride.
chlorine fluoride. ClF; m.w. 54.46; nearly col. gas; s.g. 1.62^{-100}; m.p. -154 ± 0.5; b.p. -100.8.
chlorine fluorine, tri-. ClF_3; m.w. 92.46; col. gas; s.g. 1.77^{15}; m.p. -83; b.p. 11.3.
chlorine hydrate. $Cl \cdot 5H_2O$; m.w. 125.54; cub. oct. vel.; m.p. -50.
chlorine hydrate. $Cl_2 \cdot 8H_2O$; m.w. 215.04; rhomb. lt. yel.; s.g. 1.23; s.w.
chlorine oxide, di-. ClO_2; m.w. 67.46; red.-yel. gas or or.-red cr.; d. 3.09^{11} g/l; m.p. -59; b.p. 9.9^{731}; s.w.
chlorine oxide, hept-. Cl_2O_7; m.w. 182.91; col. oil; m.p. -91.5; b.p. 82.
chlorine oxide, mon-. Cl_2O; m.w. 86.91; yel.-red gas or red-br. lq.; d. $3.89°$ g/l; m.p. -20; s.w.
chlorite. See clinochlorite.
chlorite, hypo-. Salt of hypochlorous acid, e.g. sodium hypochlorite, NaClO.
chloritoid. A silicate mineral of iron, aluminum, and magnesium.
chlormetacresol. $C_6H_3CH_3 \cdot OH \cdot Cl$. m. w. 142.45 wh. cryst. powd.; b.p. 236; s.al.; used in mfr. of dyes; preservative in glue pastes and inks.
chlormetaxylenol. $C_6H_2(CH_3)_2OH \cdot Cl$; m.w. 156.45; wh. solid; m.p. 112.5; s.al.; fungicide, germicide, and mold preventive.
chlornaphthalene. See naphthalene 1- or 2-chloro-.
chlornaphthalene, mono-. See naphthalene 1- or 2-chloro-.
chloroacetal (2-chloro-1, 1-diethoxyethane; chloroacetaldehyde diethyl acetal). $CH_2ClCH(OC_2H_5)_2$; m.w. 152.56; liq.; b.p. 156.8; s.w.; s.al.
chloroacetol. See propane, 2, 2-dichloro-.
chloroauric acid. See auric acid, chloro-.
chloroform (trichloromethane). $CHCl_3$; m.w. 119.38; col. liq.; m.p. -63.5; b.p. 61.26; s.w.; s.al.
chloroform, methyl-. See ethane, 1, 1, 1-trichloro-.
chloroform, nitro-. See chloropicrin.
chloroform, phenyl-. See toluene, α-trichloro-.
chlorogenine. See alstonine.
α-chlorohydrin. See 1, 2-propanediol, 3-chloro-.
chlorohydrin, sulfuric. See sulfonic acid, chloro-.
chloroleucite. See chloroplastid.
chloromagnesite. See magnesium chloride.
o-chloro-p-nitraniline. See aniline, 2-chloro-4-nitro-.
o-chloromercuriphenol. See mercuri phenol, o-chloro-.
chlorophenol. See phenol, chloro-.
chlorophyll. The green coloring matter of plants, the presence of which is necessary for photosynthesis to take place.
chlorophyll a. $C_{55}H_{72}MgN_4O_5 \cdot \frac{1}{2}H_2O$; m.w. 901.92; hex. lancet shaped pl.; m.p. 150-3; i.w.; s.al.
chlorophyll b. $C_{55}H_{70}MgN_4O_6$; m.w. 906.90; pl.; m.p. 183-5; i.w.; s.al.
chloropicrin (trichloronitromethane; nitrochloroform). CCl_3NO_2; m.w. 164.38; col. liq.; m.p. -64; b.p. 112; i.w.; s.al.
chloropicron. See chloropicrin.
chloroplast. See chloroplastid.
chloroplastid. Chlorophyll granule found in tissues of most plants.
chloroprene (2-chloro-1, 2-butadiene). $CH_2{:}CHCCl{:}CH_2$; m.w. 88.50; col. liq.; b.p. 59.4; s.w.; s.al.
chlorosulfonic acid. See sulfonic acid, chloro-.
chlorous acid, hypo-. HClO; m.w. 52.45 yel.; known only in salts and solution.
p-chlortoluene. See toluene, p-chloro-.
chlortoluol. See toluene, chloro-.
chlor-meta-xylenol. See m-xylene, α-chloro-.
6-chlor-ortho-xenol. See phenol, 6-chloro-2-phenyl-.
2-chlor-para-xenol. See biphenyl, 3-chlor-4-hydroxy-.
chocolate. A mixture of cacao paste, sugar, and flavoring matter.
choke coil. Induction coil used to slow down variations in fluctuating electric current.
choke damp. A name given to a gas, consisting chiefly of nitrogen and carbon dioxide, issuing from the soil into mines and frequently causing death.
cholalic acid. See cholic acid.
cholesterol (cholesterin). $C_{27}H_{45}OH$; m.w. 386.36; monocl. pearly leaf.; cr. $+1H_2O$ f. dil. al.; m.p. anh. 148.5; i.w.; s.al.; a sterol (q.v.).
cholesterol, benzoate. $C_6H_5COOC_{27}H_{45}$; m.w. 490.39; pl.; m.p. 150-1; i.al.
cholestrophan (dimethylparabanic acid). $N(CH_3)CON(CH_3)COCO$; m.w. 142.-|_____| 06; pearl. leaf.; m.p. 145; b.p. 275-7; s.w.; s.al.
cholic acid (cholalic acid; trihydroxycholanic acid; colalin). $C_{24}H_{40}O_5 \cdot H_2O$; m.w. 426.33; rhomb. cr. $+1H_2O$ f.w.; m.p. 195 (anh.); i.w.; s.al.
choline. ([β-hydroxyethyl]trimethylammonium hydroxide; bilineurine; sincaline; amanitine). $HOCH_2CH_2N(CH_3)_3OH$; m.w. 121.13; col. visc. liq.; s.w.; s.al.
choline, o-acetyl-, bromide ([β-acetoxyethyl]trimethylammonium bromide). $CH_3COOCH_2CH_2N(CH_3)_3Br$.; m.w. 226.05; col. need.; m.p. 143; s.w.; s.al.
choline, o-acetyl-β-methyl-, chloride (β-acetoxypropyltrimethylammonium chloride). $CH_3CH(OOCCH_3)CH_2N(CH_3)_3Cl$; m.w. 195.61; micro. need. f.al., et.; m.p. 172-3; s.w.; s.al.
choline, β-methyl-, chloride (β-hydroxypropyltrimethylammonium chloride). $CH_3CHOHCH_2N(CH_3)_3Cl$; m.w. 153.59; wh. pr. cr. f. N-butanol; m.p. 165-7; s.w.; s.al.
cholinium. Choline cation.
chondrin. A substance, obtained from cartilage, related to and resembling gelatin.
chondrodite. A mineral, $[Mg(F, OH)]_2Mg_3[SiO_4]_2$; monocl., wh., yel., red.-br.; sp.gr. 3.10-3.22; hardness 6.0-6.5.
chord. Line joining any two points on circumference of a circle.
Christiansen filter. Device for blocking all but a certain wave-length.
chroma. Brilliancy, strength or intensity of color.
3, 5, 7-chromantriol. See d-catechol.
chromate. Compound in which chromium has a valency of six, e.g. potassium chromate, K_2CrO_4.
chromate, di-. Compound in which two chromium atoms with a valency of six are present, e.g. potassium dichromate, $K_2Cr_2O_7$.
chromatometer. An instrument used to measure the hue and intensity of a color.
chromatic aberration. Interference due to dispersive power of lens because of different focal lengths of light of different wave lengths passing thru it.
chromatic color. Color which shows hue.
chromatic scale. An arrangement of the colors of the visible spectrum.
chromaticity. Qualitative description of color based on hue and saturation independent of brilliance.
chromatid. Longitudinal half of a chromosome in prophase or metaphase in cell mitosis.
chromatin. Readily stainable protein of acid character found in nucleous of cells.
chrome alum. See alum, potash chrome.
chrome green. See chromium oxide (ic).
chrome red. Anhydride of lead chromate, basic (q.v.), $PbCrO_4 \cdot PbO$, used as color pigment.
chrome-spinel. See picotite.
chrome steel. Steel containing 2-4% chromium; used in files and cutting tools.
chrome tanning. Leather tanning process using a solution of chromium salts and sulfuric acid.
chrome yellow. See lead chromate.
chromel. Nickel chromium alloy of high resistance and melting point.
chromic. Designation for compounds in which the chromium is positive trivalent, e.g. chromic chloride, $CrCl_3$.
chromic acid. H_2CrO_4; m.w. 118.1, exists only in solution, used in electroplating baths.
chroming. Process of applying a chromium mordant in dyeing.
chromite. A mineral; $Fe(CrO_2)_2$; cub., blk., brnsh. blk.; sp.gr. 4.32-4.57; hardness 5.5; only commercial source of chromium and its compounds.
chromium. Cr; m.w. 52.01; cub. s.g. 6.92; m.p. 1615; b.p. 2200; i.w.; a metallic element resembling iron; hard, steel-gray; occurring chiefly in chrome iron ore, $FeO \cdot Cr_2O_3$; prepared by the reduction of the oxide with aluminum; used widely in stainless steel and chromium plating. Its most important compounds are the chromates, dichromates and the chrome alums.
chromium acetate (ic). $Cr(C_2H_3O_2)_3 \cdot H_2O$; m.w. 247.10; gray-grn. powd. or bluish-grn., pasty mass; s.w.; i.al.
chromium ammonium sulfate (ic). $Cr(NH_4)(SO_4)_2 \cdot 12H_2O$; m.w. 478.36; cub. grn. or vlt.; s.g. 1.72; m.p. 94; $-9H_2O$, 100; s.w.; s.al.
chromium arsenide (ic). CrAs; m. 126.94; gray; s.g. 6.35^{18}; i.w.
chromium boride (ic). CrB; m.w. 62.8 silv. cr.; s.g. 5.4^{17}; i.w.
chromium bromide (ic). $CrBr_3$; m. 291.76; hex. olv. grn.; s.g. 4.250; s.
chromium bromide (ic) (hydrated) $CrBr_3 \cdot 6H_2O$; m.w. 399.85; hex. p grn., deliq.; s.g. 5.4^{17}; s.w.; s.al.
chromium carbide (ic). Cr_3C_2; m. 180.03; gray cr.; s.g. 6.68; m.p. 189 b.p. 3800; i.w.
chromium carbonate (ous). CrCO m.w. 112.01; amor. gray bl.; s.w i.al.
chromium chloride (ic). $CrCl_3$; m. 158.23; i. vlt. pl. (or deliq. a. cr.) s.g. 2.76^{15}; i.w.; i.al.
chromium chloride (ic) (hydrated) $[Cr(H_2O)_6]Cl_3$; m.w. 266.47; monoc vlt.; s.g. 2.76; m.p. 95; s.w.; s.al. $[CrCl_2(H_2O)_4] \cdot Cl \cdot 2H_2O$; m.w. 266.47 rhomb. grn.; s.g. 2.76; m.p. 83; b.p 1200-1500; s.w.; s.al. $CrCl_3 \cdot 10H_2O$; m.w. 338.54; grn. c powd.; s.w.; s.al.
chromium chloride (ous). $CrCl_2$; m. 122.92; wh. need., deliq.; s.w. 2.75 s.w.; s.al.
chromium fluoride (ic). CrF_3; m. 109.01; rhomb. grn.; s.g. 3.8; m.p >1000; i.w.; i.al.
chromium fluoride (ic) (hydrated) $CrF_3 \cdot 4H_2O$; m.w. 181.07; cub. oct grn.; m.w. 3.78; s.w.; i.al. $CrF_3 \cdot 9H_2O$; m.w. 271.15; vlt. bl gelat.; s.w.; i.al.
chromium fluoride (ous). CrF_2; m. 90.01; grn. cryst.; s.g. 4.11; m.p 1100; b.p. >1300; s.w.; i.al.
chromium fluosilicate, hexaures $[Cr(OCN_2H_4)_6]_2[SiF_6]_3 \cdot 3H_2O$; m. 1304.81 leaves, lt. grn.; s.w.; i.al.
chromium hydroxide (ic). $Cr(OH)_3$; m.w. 103.03; bl.-gray grn. gel. or vlt. amorph.; i.w.
chromium hydroxide (ic) (hydrated) $Cr(OH)_3 \cdot 2H_2O$; m.w. 139.06; grn. m.w. $-2H_2O$, 100; i.w.
chromium hydroxide (ous). $Cr(OH)_2$; m.w. 86.03; yel. br.
chromium iodide (ous). CrI_2; m.w 305.85; s.g. 5.196; s.w.
chromium nitrate (ic). $Cr(NO_3)_3 \cdot 7\frac{1}{2}H_2O$; m.w. 373.15; monocl. purp. m.p. 100; s.w. $Cr(NO_3)_3 \cdot 9H_2O$; m.w. 400.17; monocl purp.; m.p. 37; b.p. 125.5; s.w.; s.al.
chromium nitride (ic). CrN; m.w. 66.02 amor.; i.w.
chromium oxalate (ous). $CrC_2O_4 \cdot H_2O$ m.w. 158.03; yel. cr. powd.; s.w.
chromium oxide (ic). Cr_2O_3; m.w 152.02; hex., grn.; s.g. 5.21; m.p 1990; i.w.; i.al.
chromium oxide (ous). CrO; m.w 68.01; blk.; i.w.
chromium oxide, di-. CrO_2; m.w. 84.01 br.-blk. powd.; m.p. $-O$, 300; i.w
chromium oxide, transparent. See Guignet green.
chromium oxide, tri-. CrO_3; m.w 100.01; rhomb. red., deliq.; s.g. 2.70 m.p. 196; s.w.; s.al.
chromium oxychloride. CrO_2Cl_2; m.w 154.92. dk. red. liq.; s.g. 1.911; m.p -96.5; b.p. 117.
chromium phosphate. See chromium phosphate, ortho-.
chromium phosphate, ortho- (ic) (hydrated). $Cr(PO_4) \cdot 3H_2O$, m.w. 201.08 violet cr.; s.w. $Cr(PO_4) \cdot 4H_2O$; m.w. 219.09; grn. or. s.w. $Cr(PO_4) \cdot 6H_2O$; m.w. 255.12; tricl vlt.; s.g. 2.121; m.p. $-3\frac{1}{2}H_2O$, 100 s.w.
chromium phosphide (ic). CrP; m.w 83.03; gray blk. cr.; s.g. 5.7^{15}; i.w
chromium potassium cyanide (ic). $CrK_3(CN)_6$; m.w. 325.36; yel. monocl. s.g. 1.71; s.w.; i.al.
chromium potassium oxalate (ic). $K_3Cr(C_2O_4)_3 \cdot 3H_2O$; vlt.-red. cr. mass s.w.

omium potassium sulfate (ic). $rK(SO_4)_2 \cdot 12H_2O$; m.w. 499.42; cub. ct., red or grn.; s.g. 1.83; m.p. 89; p. $-12H_2O$, 400; s.w.; i.al.

omium rubidium sulfate. $Cr_2(SO_4)_3 \cdot Rb_2SO_4 \cdot 24H_2O$; m.w. 1091.51; cub.; g. 1.946; m.p. 107.

omium silicide (ic). Cr_3Si_2; m.w. 12.15; tetr. pr.; s.g. 5.5; i.w.

omium sulfate (ic). $Cr_2(SO_4)_3$; m.w. 92.20; vlt. or red powd.; s.g. 3.012; .w.; s.al.

romium sulfate (ic) (hydrated). $Cr_2(SO_4)_3 \cdot 5H_2O$; m.w. 482.28; grn. amor.; s.w.; s.al.

$Cr_2(SO_4)_3 \cdot 15H_2O$; m.w. 662.43; dk. grn., amor. sc.; s.g. 1.867 [17]; m.p. 100; o.p. $-10H_2O$, 100; s.w.; i.al.

$Cr_2(SO_4)_3 \cdot 18H_2O$; m.w. 716.48; cub. oct., bl.-vlt.; s.g. 1.86; m.p. $-12H_2O$; 100; s.w.; s.al.

romium sulfate (ous). $CrSO_4 \cdot 7H_2O$; m.w. 274.18; blue; s.w.; s.al.

romium sulfide (ic). Cr_2S_3; m.w. 200.20; br. blk. powd.; s.g. 3.77 [19].

romium sulfide (ous) (daubrelite). CrS; m.w. 84.07; blk. powd.; s.g. 4.1; i.w.

romium sulfide, tetra-. Cr_2S_4; m.w. 284.27; gray-blk. powd.; i.w.

romogen. Compound (principally one of the aromatic series), which has the potentiality for color tho colorless itself. Compound that selectively absorbs ultraviolet radiation.

romogenic. Class of bacteria that produce coloring matter.

romolipoid. Lipoid pigment found in plants and animals.

romomere (gene). Granule on a prophase chromosome at mitosis or miosis.

romometer. Device for comparing colors.

romone (1, 4-benzopyrone; γ-benzopyrone). $C_6H_4OCH:CHCO$; m.w. 146.05; wh. need. f. pet. eth.; m.p. 59; i.w.; s.al.

hromone, 2-phenyl-. See flavone.

hromoparous bacteria. Those which excrete a pigment.

hromophore. Group that causes the appearance of color when introduced into a chromogen (q.v.) and causes one or more absorption bands to appear in the visible spectrum when the mixture is acted on by ultraviolet rays, e.g. —N=N—.

hromophorous bacteria. Those which contain a pigment in the cells, serving a useful purpose.

hromoplast. See chromoplastid.

hromoplastid. Plastid which fails to develop chlorophyll but forms other pigments.

hromoprotein. Protein containing a pigment molecule, e.g. haemoglobin.

hromosome. One of the small bodies in the germ cells that have the power to determine the heredity of the next generation.

hromosome ring. Chromosome whose two ends have fused together forming a circle.

hromosphere. Upper portion of sun's atmosphere.

hromotropic acid (4, 5-dihydroxy-2, 7-naphthalenedisulfonic acid). $(HO)_2C_{10}H_4(SO_3H)_2$; m.w. 320.18; need. or leaf. $(+H_2O)$; s.w.; i.al.

hromous. Chromium with a positive divalency. See corresponding chromium compound.

hronograph. Device for recording time signals or intervals on a moving surface.

hronoscope. Chronograph measuring short periods of time by comparison with period of a vibrating body.

hryoprase. A green variety of chalcedony.

hrysamine. A yellow coal-tar dye used to dye leather and textiles.

hrysammic acid (2, 4, 5, 7-tetranitrochrysazin; chrysamminic acid; 1, 8-dihydroxy-2, 4, 5, 7-tetranitroanthraquinone). $C_{14}H_2(NO_2)_4(OH)_2O_2$; m.w. 420.06; yel. monocl. pr.; i.w.; s.al.

hrysaniline (2-amino-5-p-amino-phenylacridine). $C_{19}H_{15}N_3 \cdot 2H_2O$; m.w. 321.17; yel. need.; m.p. 270; s.w.; s.al.

hrysarobin. $C_{30}H_{36}O_7$; m.w. 508.28; yel. leaf.; m.p. 205-10; i.w.; s.al.

hrysazin (1, 8-dihydroxyanthraquinone). $HOC_6H_3(CO)_2C_6H_3OH$; m.w. 240.06; red. or yel. need.; or leaf. f.al.; m.p. 193; s.w.; s.al.

hrysazin, 2-hydroxy-. See anthraquinone, 1, 2, 8-trihydroxy-.

hrysazin, 3-methyl-. See chrysophanic acid.

hrysazin, 2, 4, 5, 7-tetranitro-. See chrysammic acid.

hrysazol (1, 8-anthracenediol; 1, 8-anthradiol). $HOC_6H_3(CH)_2C_6H_3OH$; m.w. 210.08; yel. need. f.dil.al.; i.w.; s.al.

hrysene (benzo[a]phenanthrene). $C_{18}H_{12}$; m.w. 228.09; col. rhomb. pl. f. bz. or ac. a. with red-vlt. fluores.; m.p. 254; b.p. 448; s.w.; i.al.

hrysenequinone. See chrysoquinone.

hrysin (5, 7-dihydroxyflavone). $C_{15}H_{10}O_4$; m.w. 254.08; pa. yel. pl.; m.p. 275; i.w.; i.al.

hrysoberyl (cymophane). A mineral, $BeO \cdot Al_2O_3$; rhomb., grn.-yel.; sp.gr. 3.50-3.84; hardness 8.5; see also beryllium aluminate.

hrysocolla. A mineral, $CuSiO_3 \cdot 2H_2O$; amor., tetr. or hex., grn.-bl.-blk; sp.gr. 2.40-2.42; hardness 2-4.

hrysoidine. One of a group of yellow to brown dyes, e.g. aniline yellow; the diaminoazobenzenes; specifically the hydrochloride of 2:4 diaminoazobenzene used as a dye.

hrysoidine (base) (2, 4-diaminoazobenzene; 4-phenylazo-m-phenylenediamine). $C_6H_5N:NC_6H_3(NH_2)_2$; m.w. 212.13; pa. yel. cr. f.w.; m.p. 117.5; s.w.; s.al.

hrysoidine (base) hydrochloride. $C_6H_5N:NC_6H_3(NH_2)_2HCl$; m.w. 248.59; redsh.-br. cr. or powd.; s.w.; s.al.

hrysolite. See olivine.

hrysophanic acid (1, 8-dihydroxy-3-methylanthraquinone; 3-methylchrysazin). $C_{14}H_6(OH)_2(CH_3)O_2$; m.w. 254.08; hex. or monocl. yel. cr. f. al.; m.p. 196; s.w.; i.al.

hrysophrase. A variety of chalcedony.

hrysoquinone (chrysenequinone; 1, 2-chrysenedione). $C_{18}H_{10}O_2$; m.w. 258.08; redsh. or need. f.ac.a.; m.p. 239.5; i.w.; s.al.

hrysotile. A variety of serpentine (q.v.), an asbestos fibre occurring abundantly, suited for spinning and weaving, and used in fireproof fabrics.

Chrystolon. Silicon carbide.

chyle. The alkaline fluid resulting from the action of the biliary and pancreatic juices on chyme.

chylomicron emulsion. Dispersion of fat in blood in the body.

chyme. Stomach-digested food.

Cibanaphthol. Series of beta-hydroxynaphthoic acid derivatives used as dye developers.

cicoid (c-). Term used instead of cis, where the configuration is not known, to indicate reactivity of the hydroxyl group of an organic compound.

cicoil. Oiticica oil of improved quality produced by a special process of heating, so that it remains permanently liquid.

cilia. Plural of cilium (q.v.).

cilium (flagellum). Thread like appendage by which certain microorganisms propel themselves.

cimolite. Purified Fuller's earth.

cinchamidine. See hydrocinchonidine.

cinchomeronic acid (3, 4-pyridinedicarboxylic acid). $C_5H_3N(CO_2H)_2$; m.w. 167.05; pr.f.w. or HCl; s.w.; s.al.

cinchona bark. Dried bark of the various species of cinchona, used in medicine.

cinchonamine. $C_{19}H_{24}N_2O$; m.w. 296.20; rhomb. need. f.al.; m.p. 194; i.w.; s.al.

cinchonicine (cinchotoxine). $C_{19}H_{22}N_2O$; m.w. 294.19; need.; m.p. 58-60; s.w.; s.al.

cinchonidine. $C_{19}H_{22}N_2O$; m.w. 294.19; trim. pr. f.al.; m.p. 210.5; i.w.; s.al.

cinchonidine, bisulfate. $C_{19}H_{22}N_2O \cdot H_2SO_4 \cdot 5H_2O$; m.w. 482.34; lng. monocl. pr.; s.w.; s.al.

cinchonidine, hydrochloride. $C_{19}H_{22}N_2O \cdot HCl \cdot H_2O$; m.w. 348.67; wh. cr. powd.; m.p. anh. 242; s.w.; s.al.

cinchonidine, sulfate. $(C_{19}H_{22}N_2O)_2 \cdot H_2SO_4 \cdot 3H_2O$; m.w. 740.50; monocl. glist. need., efflor.; m.p. anh. 205; s.w.; s.al.

cinchonine. $C_{19}H_{22}N_2O$; m.w. 294.19; col. need., col. monocl. f.al.; m.p. 255; i.w.; i.al.

cinchonine, bisulfate. $C_{19}H_{22}N_2O \cdot H_2SO_4 \cdot 4H_2O$; m.w. 464.33; wh. rhomb. octah.; s.w.; s.al.

cinchonine, hydrochloride. $C_{19}H_{22}N_2O \cdot HCl \cdot 2H_2O$; m.w. 366.68; col. monocl.; m.p. anh., 217-8.; s.w.; s.al.

cinchonine, hydroxy-. See cupreine.

cinchonine, nitrate. $C_{19}H_{22}N_2O \cdot HNO_3 \cdot \frac{1}{2}H_2O$; m.w. 366.21; col. monocl.; s.w.; s.al.

cinchonine, sulfate. $(C_{19}H_{22}N_2O)_2 \cdot H_2SO_4 \cdot 2H_2O$; m.w. 722.48; col. rhomb.; m.p. anh. 198.5; s.w.; s.al.

cinchophen (atophan; 2-phenylquinoline-4-carboxylic acid). $C_9H_6N \cdot C_6H_5 \cdot COOH$, 2:4; m.w. 249.09; wh. need. cryst.; m.p. 213-216; i.w.; s.al.; used in medicine for treatment of gout.

cinchotine (hydrocinchonine; pseudocinchonine). $C_{19}H_{24}N_2O$; m.w. 296.20; pr.; m.p. 286; s.w.; s.al.

cinchotoxine. See cinchonicine.

cineole (1, 8-epoxy-p-menthane; eucalyptole; cajeputole). $C_{10}H_{18}O$; m.w. 154.14; col. liq.; m.p. +1.5; b.p. 176-7; i.w.; s.al.

1, 4-cineole (p-cineole; 1, 4-epoxy-p-menthane). $C_{10}H_{18}O$; m.w. 154.14; m.p. +1; b.p. 173.4; i.w.; s.al.

l-cineolic acid (l-tetrahydro-2, 6, 6-trimethyl-1, 4-pyran-2, 5-dicarboxylic acid). $C_{10}H_{16}O_5$; m.w. 216.12; cr.; i.al.

cinnabar (natural vermillion). A mineral, HgS; hex., scarlet, redsh.-br., blk.; sp.gr. 8.0-8.2; hardness 2.0-2.5; the only ore of mercury.

cinnabarite. See mercury sulfide (ic) (a).

cinnamaldehyde (3-phenylpropenal; β-phenylacrolein; cinnamic aldehyde). $C_6H_5CH:CHCHO$; m.w. 132.06; col. liq.; m.p. −7.5; b.p. 251; s.w.; s.al.

cinnamein. See cinnamic acid, benzyl ester.

cinnamene. See styrene.

cinnamic acid (ordinary or trans) (trans-β-phenyl-acrylic acid, trans-benzenepropenoic acid). $C_6H_5CH:CHCOOH$; m.w. 148.06; col. monocl.; m.p. 133; b.p. 300; i.w.; s.al.

allo-cinnamic acid (cis-cinnamic acid [68°]). $C_6H_5CH:CHCOOH$; m.w. 148.06; monocl. pr.; m.p. 68; b.p. 125 [19]; s.al.

cinnamic acid, α-acetyl-, ethyl ester (ethyl α-benzalacetoacetate). $C_6H_5CH:C(COCH_3)COOC_2H_5$; m.w. 218.11; m.p. 59; b.p. 181 [17]; s.al.

cinnamic acid, allyl ester (allyl cinnamate). $C_6H_5CH:CHCOOC_3H_5$; m.w. 188.09; wh.-yel. cr.; i.w.; s.al.

cinnamic acid, m-amino-. $NH_2C_6H_4CH:CHCOOH$; m.w. 163.08; pa. yel. need.; m.p. 181; s.w.; s.al.

cinnamic acid, o-amino- (β-[o-aminophenyl] acrylic acid). $NH_2C_6H_4CH:CHCOOH$; m.w. 163.08; yel. need.; s.w.; s.al.

cinnamic acid, p-amino-. $NH_2C_6H_4CH:CHCOOH$; m.w. 163.08; pa. yel. need.; s.w.; s.al.

l-cinnamic acid, α-amino-hydro-. See l-alanine, β-phenyl-.

cinnamic acid, o-amino-, lactam. See carbostyril.

cinnamic acid, benzyl ester (cinnamein). $C_6H_5CH:CHCOOCH_2C_6H_5$; m.w. 238.11; col. pr.; m.p. 39; b.p. 244 [15]; s.al.

cinnamic acid, α-bromo- (2-bromo-3-phenylpropenoic acid; α-bromo-β-phenylacrylic acid). $C_6H_5CH:CBrCOOH$; m.w. 226.97.
cis: rhomb. f.w.; m.p. 120-1; b.p. 111 [0.6]; s.w.; s.al.
trans: need. f.w.; m.p. 131-2; b.p. 121 [0.6]; s.w.; s.al.

cinnamic acid, β-bromo- (3-bromo-3-phenylpropenoic acid; β-bromo-β-phenylacrylic acid). $C_6H_5CBr:CHCOOH$; m.w. 226.97.
cis: monocl. f.al.; m.p. 160; b.p. 111 [0.6]; s.w.; s.al.
trans: need. f.w.; m.p. 134-5; b.p. 122 [0.6]; s.w.; s.al.

cinnamic acid, o-carboxy- (o, β-styrenedicarboxylic acid). $(COOH)C_6H_4CH:CHCOOH$; m.w. 192.06; need. f.w.; m.p. 175; s.w.; s.al.

cinnamic acid, p-carboxy- (p, β-styrenedicarboxylic acid). $(COOH)C_6H_4CH:CHCOOH$; m.w. 192.06; infus. powd.; i.w.

cinnamic acid, cinnamyl ester. See styracin.

cinnamic acid, dibromide. See hydrocinnamic acid, α, β-dibromo-.

allo-cinnamic acid, α-β-dibromo- (cis-2, 3-dibromo-3-phenylpropenoic acid; β-dibromocinnamic acid). $C_6H_5CBr:CBrCOOH$; m.w. 305.88; yel. pl. f. chl.; m.p. 100; b.p. 124 [0.5]; i.w.; s.al.

cinnamic acid, 2, 4-dihydroxy-. See umbellic acid.

cinnamic acid, 2, 5-dihydroxy- (3-[2, 5-dihydroxyphenyl] propenoic acid). $(HO)_2C_6H_3CH:CHCOOH$; m.w. 180.06; cr.f.w.; s.al.

cinnamic acid, 3, 4-dihydroxy-. See caffeic acid.

cinnamic acid, α-ethyl-. $C_6H_5CH:C(C_2H_5)COOH$; m.w. 176.09; need. f.w.; m.p. 104-5; s.al.

cinnamic acid, ethyl ester (ethyl trans-3-phenylprenoate). $C_6H_5CH:CHCOOC_2H_5$; m.w. 176.09; col. liq.; m.p. 6.5; b.p. 271; i.w.; s.al.

cinnamic acid, m-hydroxy-. See m-coumaric acid.

cinnamic acid, o-hydroxy-. See o-coumaric acid.

cinnamic acid, p-hydroxy-. See p-coumaric acid.

cinnamic acid, 3-hydroxy-4-methoxy-. See isoferulic acid.

cinnamic acid, 4-hydroxy-3-methoxy-. See ferulic acid.

cinnamic acid, β-ketohydro-. See acetic acid, benzoyl-.

cinnamic acid, β-ketohydro-, ethyl ester. See acetic acid, benzoyl, ethyl ester.

cinnamic acid, α-methyl- (α-benzalpropionic acid). $C_6H_5CH:C(CH_3)COOH$; m.w. 162.08; need. or pr. f. bz.; m.p. 74; b.p. 288; s.al.

cinnamic acid, methyl ester (methyl cinnamate). $C_6H_5CH:CHCOOCH_3$; m.w. 162.08; col. cr.; m.p. 36; b.p. 261.9; i.w.; s.al.

cinnamic acid, m-nitro-. $NO_2C_6H_4CH:CHCOOH$; m.w. 193.06; col. (yel.) need. f.al.; m.p. 193; s.w.; s.al.

cinnamic acid, o-nitro-. $NO_2C_6H_4CH:CHCOOH$; m.w. 193.06; ac. or need. f.al.; m.p. 240; i.w.

cinnamic acid, p-nitro-. $NO_2C_6H_4CH:CHCOOH$; m.w. 193.06; lt. yel. pr. f. al.; m.p. 286; s.al.

cinnamic acid, m-nitro-, ethyl ester. $NO_2C_6H_4CH:CHCOOC_2H_5$; m.w. 221.09; m.p. 74-6; i.w.; s.al.

cinnamic acid, o-nitro-, ethyl ester. $NO_2C_6H_4CH:CHCOOC_2H_5$; m.w. 221.09; yel. rhomb. need.; m.p. 44; s.al.

cinnamic acid, p-nitro-, ethyl ester. $NO_2C_6H_4CH:CHCOOC_2H_5$; m.w. 221.09; yel. tricl. need.; m.p. 141; i.w.; s.al.

cinnamic acid, m-nitro-, methyl ester. $NO_2C_6H_4CH:CHCOOCH_3$; m.w. 207.08; pa. yel. pr. f. al.; m.p. 123-4; i.w.; s.al.

cinnamic acid, α-phenyl- (trans-α, β-

diphenylacrylic acid). $C_6H_5CH{:}C(C_6H_5)COOH$; m.w. 224.09; (trans) wh. need. f. dil. al.; (cis) need.; m.p. (trans) 172; (cis) 137-8; s.w.; s.al.

cinnamic acid, γ-phenylallyl ester. See styracin.

cinnamic acid, p-phenylphenacyl ester. $C_6H_5CH{:}CHCOOCH_2COC_6H_4C_6H_5$; m.w. 342.14; m.p. 182.5.

cinnamic alcohol (3-phenyl-2-propen-1-ol; styrylcarbinol; γ-phenylallyl alcohol; cinnamyl alcohol; styrone). $C_6H_5CH{:}CHCH_2OH$; m.w. 134.08; need.; m.p. 33; b.p. 257.5; s.w.; s.al.

cinnamic alcohol, 4-hydroxy-3-methoxy-. See coniferyl alcohol.

cinnamic aldehyde. See cinnamaldehyde.

cinnamic aldehyde, amyl. See amyl cinnamic aldehyde.

cinnamic anhydride (trans-β-phenylacrylic anhydride). $(C_6H_5CH{:}CHCO)_2O$; m.w. 278.11; need. f. al.; m.p. 135-6; i.w.; s.al.

cinnamone. See styryl ketone.

cinnamonitrile, β-ketohydro-. See acetonitrile, benzoyl-.

cinnamon leaf oil. See oil, cinnamon leaf.

cinnamon oil. See oil, cinnamon.

cinnamoyl chloride. See cinnamyl chloride.

cinnamyl alcohol. See cinnamic alcohol.

cinnamyl chloride (cinnamoyl chloride; trans-β-phenylacrylyl chloride; trans-benzenepropenoyl chloride). $C_6H_5CH{:}CHCOCl$; m.w. 166.51; cr.; m.p. 36; b.p. 257.5; i.w.; s.al.

cinnamyl chloride. See also propene, 3-chloro-1-phenyl-.

cinnamyl cinnamate. See styracin.

circuit, balanced. One where the potentials of the two conductors of circuit are equal and at the earth's potential.

circuit driver (radio-frequency generator). Generator of high frequency potential for experimental use.

circuit, unbalanced. One in which only one of the two conductors is effectively at the potential of the earth.

circuital (rotational). Circuitation not equal to zero; not lamellar.

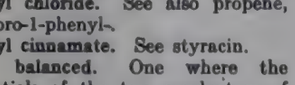
circuitation. Line integral of a vector point function around a closed path.

circular mil. Measure for cross section of wires; area of a circle whose diameter is one mil; 0.7854×10^{-6} square inch.

circulation. Line integral of tangential component of the velocity of a fluid around the closed path.

cirtine (false topaz). A variety of quartz used in jewelry.

cis compound. Isomer of double-bonded compounds having like groups on the same side of the double bond, e.g.



cis compound trans compound

See trans compound.

cissing. Receding of applied material into drops; phenomenon of non-wetting.

cissoid. Inverse of a parabola with respect to its vertex.

citraconic acid (cis-methylbutenedioic acid; methylmaleic acid). $CH_3C(COOH){:}CHCOOH$; m.w. 130.05; monocl.; m.p. 91; s.w.

citraconic anhydride (methylmaleic anhydride). $OCOC(CH_3){:}CHCO$; m.w. 112.03; m.p. 7-8; b.p. 213-4; s.al.

citral a (geranial). $C_{10}H_{16}O$; m.w. 152.12; col. liq.; b.p. 229; i.w.; s.al.

citral b (neral). $C_{10}H_{16}O$; m.w. 152.12; b.p. 103 [12].

dl-citramalic acid. (dl-2-hydroxy-2-methylbutanedioic acid; dl-α-hydroxypyrotartaric acid; dl-α-methylmalic acid). $CH_3C(OH)(COOH)CH_2COOH$; m.w. 148.06; monocl. pr.; m.p. 119; s.w.; s.al.

citrene. See d-limonene.

citric acid (2-hydroxy-1, 2, 3-propanetricarboxylic acid; β-hydroxytricarballylic acid). $(COOH)CH_2C(OH)(COOH)CH_2COOH$; m.w. 192.06; col. rhomb.; (cr. $+1H_2O$ f.w.). m.p. $-H_2O$, 70-5; s.w.; s.al.

citric acid, hydroxy-. See tricarballylic acid, α, β-dihydroxy-.

citric acid, p-phenylphenacyl ester. $C_{48}H_{38}O_{10}$; m.w. 774.30; m.p. 146.

citric acid, trimethyl ester (methyl citrate). $C_3H_4(OH)(COOCH_3)_3$; m.w. 234.11; col. tricl.; m.p. 79; s.w.; s.al.

citronella oil. See oil, citronella.

d-citronellal (d-rhodinal). $CH_2{:}C(CH_3)(CH_2)_3CH(CH_3)CH_2CHO$; m.w. 154.14; col. liq.; b.p. 205-8; s.w.; s.al.

l-citronellal. $C_{10}H_{18}O$; m.w. 154.14; b.p. 205-6; s.w.; s.al.

d-citronellol. $C_{10}H_{19}OH$; m.w. 156.16; col. liq.; b.p. 222; s.w.; s.al.

dl-citronellol (dihydrogeraniol). $C_{10}H_{20}O$; m.w. 156.16; b.p. 99 [10].

civet. An odoriferous material obtained from the civet cat, containing fat, mucus, resin, and a volatile oil, used in perfumery.

civetone (9-cycloheptadecen-1-one). $CO(CH_2)_7CH{:}CH(CH_2)_7$; m.w. 250.23; m.p. 32.5; b.p. 342 [743].

Clairaut-Helmert formula. Formula showing variation of value of gravity with altitude.

Claisen condensation. A reaction in organic chemistry resulting in the production of ethyl acetoacetate from sodium, ethyl acetate and alcohol.

Clapeyron equation. Formula showing relation of latent heat of vaporization with volume increase, during vaporization, in work units.

Clark cell. Standard cell for measuring electrical potential, using mercury and zinc amalgam electrodes in zinc sulfate solution.

classical statistics. Statistical analysis system of distribution of gaseous molecules or of radiation quanta and their moments derived from the number of these respective entities in any given elementary compartment of ordinary or momentum space.

claudetite. A mineral, As_2O_3; monocl.; sp.gr. 3.85-4.151; hardness 2.5.

Clausius equation. Differential equation showing relationship between specific heat at constant pressure, of a fluid, with its volume; equation referring to equilibrium of a liquid and its saturated vapor; empirical characteristic equation for a gas.

Clausius-Mosotti law. Ratio between density and dielectric constant of dielectrics.

clausthalite. See lead selenate.

clay (kaolin, china clay, white bole, bolus alba, argilla, porcelain clay). Various natural substances, all containing hydrated silicate, having the characteristics of being plastic when wet and of baking to a hard stone-like mass when heated to full redness; $H_2Al_2(SiO_4)_2{\cdot}H_2O$.

clay, ball. See fat clay.

clay, brown ironstone. See limonite.

clay, china. See clay.

clay, colloidal. See bentonite.

clay, fat. See fat clay.

clay, fire. Sedimentary clay of low flux content.

clay, porcelain. See clay.

cleaners' solvent. Well refined petroleum fraction having a boiling range between 300-400° F. and used in dry cleaning.

cleanup. Slow removal of gases from operating discharge tubes.

Clemmensen reduction. Reducing process used with aromatic ketones and secondary alcohols.

Clenesco. Anhydrous sodium metasilicate.

cleveite. A radioactive mineral, a crystalline variety of urananite; cub.; sp.gr. 7.49; hardness 5.5.

Climeline. A trisodium phosphate used in softening water.

clink. Minute crack in high carbon steels caused by expansion and contraction.

clinker. More or less vitreous or fused stony matter; small balls of cement insoluble in water unless ground into a fine powder.

clinochlore. A mineral silicate of aluminum and magnesium with varying amounts of iron.

clinochlorite (chlinochlore). A mineral, $H_8Mg_5Al_2Si_3O_{18}$, monocl., grn. to yelsh. or wh.; sp.gr. 2.65-2.78; hardness 2.0-2.5.

clinoenstatite. See magnesium silicate.

clinometer. Instrument for measuring tilt of beds of rock in degrees.

closed chain. See chain, closed.

closed ring compound. See chain, closed.

cloud point. Temperature at which wax or other insoluble substances begin to crystallize in or separate from an oil which has been chilled.

cloud track. Droplets produced in a cloud chamber by ionizing particles leaving a visible track of the path of such particles.

cloves oil. See oil, cloves.

club-moss. See lycopodium.

clupanodonic acid. $C_{21}H_{33}COOH$; m.w. 330.27; pa. yel. oil; m.p. <-78; b.p. 236 [5]; i.w.

cluster. Group of atoms united by electrical attraction of charged ion.

coagel. Gel formed during coagulation; coarser than gel produced by swelling of the colloid.

coaggregation. Coalescence of fog particles into large visible units.

coagulation. Irreversible precipitation, e.g. heating a water dispersion of albumin.

coagulite. Material used to precipitate and coagulate hydroxides of iron in water supplies.

coal. See common banded coal, splint coal, cannel coal, boghead coal.

coal gas. A gas containing hydrogen (50), methane (33½), carbon monoxide (10), hydrocarbons and benzene, obtained by destructive distillation of coal.

coal oil. See kerosene.

coal, sea. Finely ground soft coal used in foundry work.

coal tar viscous. Residue formed in manufacture of gas from coal; consists of amorphous resinous compounds, phenolic in nature; sp.gr. 1.08-1.25; s.al.; used in mfr. of organic compounds; roofing compositions, road making, wood preservative, etc.

coal tar color. Dye obtained or made from the products of distillation of coal-tar, e.g. from benzene and naphthalene.

coal tar naphtha. See naphtha, coal-tar.

coal tar phenols. The mixture of those constituents of coal tar or of coal tar fractions which are soluble in aqueous caustic soda solution; consisting essentially, but not always entirely, of monohydric phenols.

coal tar pitch. See pitch, coal tar.

coalescence. A combination caused by molecular attraction resulting from proximity of surfaces of globules in an emulsion.

coalification. Metamorphosis of vegetable debris into coal.

coat, scratch. Masonry designation for first coat which is roughened to give a better grip for subsequent coats.

coaxial. Figures or bodies whose axes are coincident.

cobalt. Co; at. wt. 58.94; cub.; s.g. 8.9; m.p. 1480; b.p. 2900; i.w.; a metallic element, silver-gray, reddish tinge; brittle, hard, very magnetic, prepared by reduction of the oxide with aluminum, occurring naturally in various sulfides; used in alloys, and in its salts, to produce blue colors in porcelain, glass, pottery, enamels, etc.

cobalt acetate (ous). $Co(C_2H_3O_2)_2{\cdot}4H_2O$; m.w. 249.05; monocl. red-v deliq.; s.g. 1.705 [19]; b.p. $-4H_2O$, 1 s.w.; s.al.

cobalt aluminate (Thenard's blu $Co(AlO_2)_2$; m.w. 176.88; cub. blue; i.

cobalt ammine. One of a group compounds of cobalt and ammonia, t latter being coordinately combine e.g. cobaltichloride hexammin $Co(NH_3)_6Cl_3$.

cobalt ammonium chloride (ou $CoCl_2{\cdot}NH_4Cl{\cdot}6H_2O$; m.w. 291.44; re deliq.; s.w.

cobalt ammonium phosphate (ous $CoNH_4PO_4{\cdot}H_2O$; m.w. 190.01; vl cr. powd.; i.w.

cobalt ammonium sulfate (ous). $CoSO_4{\cdot}(NH_4)_2SO_4{\cdot}6H_2O$; m.w. 395.2 monocl. ruby-red; s.g. 1.902; s.w.; i.a

cobalt arsenate (ous) (erythrite $Co_3(AsO_4)_2{\cdot}8H_2O$; m.w. 598.8 monocl. vlt.-red.; s.g. 2.948; i.w.

cobalt arsenite (ous). $Co_3H_6(AsO_3)_4{\cdot}H_2O$; m.w. 692.60; rose red; m.p $-H_2O$, 100; i.w.

cobalt benzoate (ous). $Co(C_6H_5CO_2)_2{\cdot}4H_2O$; m.w. 373.08; gray-red leaf m.p. $-4H_2O$, 115 s.w.

cobalt black. See cobalt oxide.

cobalt bloom. See erythrite.

cobalt blue. See cobalt aluminate.

cobalt boride (ic). CoB; m.w. 69.76 pr.; s.g. 7.25 [18].

cobalt bromate (ous). $Co(BrO_3)_2{\cdot}6H_2O$ m.w. 422.87; oct. red.; s.w.

cobalt bromide (ous). $CoBr_2$; m.w 218.77; grn. cr., deliq.; s.g. 4.909 [25] s.w.; s.al.

cobalt bromide (ous) (hydrated) $CoBr_2{\cdot}6H_2O$; m.w. 326.87; pr. red vlt., deliq.; s.g. 2.46; m.p. 47-8 $-4H_2O$, 100; b.p. $-6H_2O$, 130; s.w. s.al.

cobalt n-butyrate (ous). $Co(C_4H_7O_2)_2$ m.w. 233.05; purp.-red gran. powd. s.w.

cobalt carbonate (ous) (spherocobaltite) $CoCO_3$; m.w. 118.94; trig., red. s.g. 4.13; i.w.

cobalt carbonate, basic (ous). $2CoCO_3{\cdot}3Co(OH)_2$; m.w. 516.75; vlt.-red prisms; i.w.

cobalt, carbonyl, tetra-. $Co(CO)_4$; m.w 170.94; or. cr.; s.g. 1.73 [18]; m.p. 51 i.w.; s.al.

cobalt carbonyl, tri-. $Co(CO)_3$; m.w 142.94; blk. cr.; s.w.

cobalt chlorate (ous). $Co(ClO_3)_2{\cdot}6H_2O$ m.w. 333.95; cub. red., deliq.; s.g 192; m.p. 61; s.w.; s.al.

cobalt chlorate, per- (ous). $Co(ClO_4)_2$ m.w. 257.85; red. need.; s.g. 3.327 s.w.; s.al.

cobalt chlorate, per- (ous) (hydrated) $Co(ClO_4)_2{\cdot}6H_2O$; m.w. 365.96; hex. m.p. 143.

cobalt chloride (ic). $CoCl_3$; m.w. 165.31 ruby-red. cr.; s.g. 2.94; s.w.; s.al.

cobalt chloride (ous). $CoCl_2$; m.w 129.85; bl. cr.; s.g. 3.356; b.p. 1049 s.w.; s.al.

cobalt chloride (ous) (hydrated) $CoCl_2{\cdot}2H_2O$; m.w. 165.89; s.g 2.477[14]. $CoCl_2{\cdot}6H_2O$; m.w. 237.95; monocl red.; s.g. 1.924[14]; m.p. 86; b.p $-6H_2O$, 100; s.w.; s.al.

cobalt chromate (ous). $CoCrO_4$; m.w 174.95; yel.-br. powd.; i.w.

cobalt citrate (ous). $Co_3(C_6H_5O_7)_2$ $2H_2O$; m.w. 590.93; rose-red; m.p $-2H_2O$, 150; s.w.

cobalt cyanide (ous). $Co(CN)_2{\cdot}2H_2O$ m.w. 146.99; buff; s.g. anh. 1.872 m.p. $-2H_2O$, 280; i.w. $Co(CN)_2{\cdot}3H_2O$; m.w. 165.00; amor red-gray powd.; m.p. $-3H_2O$, 250 i.w.

cobalt ferricyanide (ous). $Co_3[Fe(CN)_6]_2$ m.w. 600.60; red.; i.w.

cobalt ferrocyanide (ous). $Co_2Fe(CN)_6{\cdot}7H_2O$; m.w. 455.88; gray-grn.; i.w.

cobalt fluoride (ic). CoF_3; m.w. 115.94 grn. powd.

cobalt fluoride (ous). $CoF_2{\cdot}2H_2O$; m.w

32.97; monocl. rose red; s.g. anh. 43; s.w.

oF$_2$·5HF·6H$_2$O; m.w. 305.07; trig range red; s.g. 2.045.

alt fluosilicate (ous). CoSiF$_6$·6H$_2$O; .w. 309.09; trig. pink; s.g. 2.113 ^{19}; w.

alt fluosilicate, tetrapyridine. Co(C$_5$H$_5$N)$_4$SiF$_6$; m.w. 517.19; rhomb. ink. s.g. 2.215.

alt formate (ous). Co(CHO$_2$)$_2$·-H$_2$O; m.w. 184.99; red cr.; s.g. .129 ^{23} m.p. −2H$_2$O, 140; b.p. anh. . 175; s.w.

alt glance. See cobaltite.

alt hydrate. See cobalt hydroxide ous).

alt hydroxide (ic). Co(OH)$_3$; m.w. 09.96; blk.-br. powd.; i.al.

alt hydroxide (ous). Co(OH)$_2$; m.w. 2.96; rhomb. rose red; s.g. 3.597 ^{15}.

alt iodate (ous). Co(IO$_3$)$_2$; m.w. 08.78; bl. vlt. need.; s.g. 5.008 ^{18}.

alt iodate (ous) (hydrated). Co(IO$_3$)$_2$·6H$_2$O; m.w. 516.87; s.g. 3.689 ^{21}.

alt iodide (ous). CoI$_2$; m.w. 312.78; or. red., deliq.; s.g. 5.68; s.w.; s.al.

alt iodide (ous) (hydrated). CoI$_2$·-2H$_2$O; m.w. 348.81; grn., deliq.; s.w. CoI$_2$·6H$_2$O; m.w. 420.87; hex. br.-red; s.g. 2.90; m.p. −6H$_2$O, 130; s.w.; s.al.

alt linoleate (ous). Co(C$_{18}$H$_{31}$O$_2$)$_2$; m.w. 617.42; brown amor.; i.w.; s.al.

alt magnesium aluminate (spinel blue). CoMg(AlO$_2$)$_2$; m.w. 201.20; i.w.

alt naphthenate. A drier in paints and varnishes.

alt nitrate (ous). Co(NO$_3$)$_2$·6H$_2$O; m.w. 291.05; monocl. red, deliq.; s.g. 1.87; m.p. <−100; b.p. −3H$_2$O, 55; s.w.; s.al.

alt oleate (ous). Co(C$_{18}$H$_{33}$O$_2$)$_2$; m.w. 621.45; br. amor. powd.; i.w.; s.al.

alt oxalate (ous). CoC$_2$O$_4$; m.w. 146.94; redsh. wh.; s.g. 2.325 ^{19}; i.w.

alt oxide (ic). Co$_2$O$_3$; m.w. 165.88; blk.-gray powd.; s.g. 5.18; i.w.; i.al.

alt oxide (ous). CoO; m.w. 74.94; cub. grn.-br.; s.g. 5.68; i.w.; i.al.

alt oxide (ous, ic). Co$_3$O$_4$; m.w. 240.82; cub. blk.; s.g. 6.07; i.w.

alt phosphate. See cobalt phosphate, ortho-.

alt phosphate, ortho- (ous). Co$_3$(PO$_4$)$_2$; m.w. 366.86; redsh.; i w.

alt phosphate, ortho- (ous) (hydrated). Co$_3$(PO$_4$)$_2$·2H$_2$O; m.w. 402.89; pink powd.; i.w.

Co$_3$(PO$_4$)$_2$·3H$_2$O; m.w. 420.91; red; s.w.

Co$_3$(PO$_4$)$_2$·8H$_2$O; m.w. 510.98; redsh. powd.; m.p. −8H$_2$O, 250; s.w.; i.al.

alt phosphide. Co$_2$P; m.w. 148.90; am. need.; s.g. 6.4 ^{15}; i.w.

alt phosphite, ortho- (ous). CoHPO$_3$·-2H$_2$O; m.w. 175.00; redsh.; s.w.

alt potassium carbonate (ous). CoCO$_3$·KHCO$_3$·4H$_2$O; m.w. 291.11; rose cryst.

alt potassium nitrite (ic). CoK$_3$(NO$_2$)$_6$; m.w. 452.29; yel. pr.; s.w.; i.al.

alt potassium nitrite (ic) (hydrated). CoK$_3$(NO$_2$)$_6$·H$_2$O; m.w. 470.30; yel. cr. powd.; sp.gr. 5.18; i.w.; i.al.; a yellow pigment in oil and water paints and in rubber; used in medicine.

alt potassium sulfate (ous). CoK$_2$(SO$_4$)$_2$·6H$_2$O; m.w. 437.35; monocl. pr. red; s.g. 2.218; s.w.

alt propionate (ous). Co(C$_3$H$_5$O$_2$)$_2$·-3H$_2$O; m.w. 259.06; dk. red cr.; m.p. ca. 250; s.w.; s.al.

opper pyrites. See chalcopyrite.

alt resinate (ous). Co(C$_{44}$H$_{61}$-O$_4$)$_2$·Br; amorp. powd.; i.w.; used as a drier in paints and varnishes.

obalt rhenate, per- (ous). Co(ReO$_4$)$_2$·-5H$_2$O; m.w. 649.64; dk. pink.

obalt selenate (ous). CoSeO$_4$·5H$_2$O; m.w. 292.22; tricl. ruby red; s.g. 2.512; s.w.

cobalt selenide (ous). CoSe; m.w. 138.14; hex. yel.; s.g. 7.65.

cobalt silicate (ous). Co$_2$SiO$_4$; m.w. 209.94; dk. vlt. cr.; s.g. 4.63; i.w.

cobalt sulfate (ic). Co$_2$(SO$_4$)$_3$; m.w. 406.06; bl. cr. powd.

cobalt sulfate (ous). CoSO$_4$; m.w. 155.00; red. powd.; s.g. 3.71‡‡; m.p. 989; s.w.

cobalt sulfate (ous) (bieberite). CoSO$_4$·-7H$_2$O; m.w. 281.11; monocl. red.-pink; s.g. 1.948‡‡; m.p. 96.8; −7H$_2$O, 420; s.w.

cobalt sulfide (ic). Co$_2$S$_3$; m.w. 214.06; blk. cryst.; s.g. 4.8; i.w.

cobalt sulfide (ous) (syeporite). CoS; m.w. 91.00; hex. br.; s.g. 5.45; m.p. >1100; s.al.

cobalt sulfide di-. CoS$_2$; m.w. 123.06; cub. blk.; s.g. 4.269; i.w.

cobalt sulfite (ous). CoSO$_3$·5H$_2$O; m.w. 229.08; red.; i.w.

cobalt tartrate (ous). CoC$_4$H$_4$O$_6$; m.w. 206.97; monocl. redsh.; s.w.

cobalt thiocyanate (ous). Co(SCN)$_2$·-4H$_2$O; m.w. 247.14; dk. bl. hyg. cr.; s.w.

cobalt tungstate (ous). CoWO$_4$; m.w. 306.94; red.-br. powd.; i.w.

cobalt ultramarine. See cobalt aluminate.

cobalt yellow. See cobalt potassium nitrite.

cobaltichloride aquapentammine. [Co(NH$_3$)$_5$H$_2$O]Cl$_3$; m.w. 268.48; brick red cr.; s.w.; i.al.

cobaltichloride chloropentammine. [CoCl(NH$_3$)$_5$]Cl$_2$; m.w. 250.47; rhomb. dk. red-violet; s.g. 1.819‡‡; i.al.

cobaltichloride hexammine. Co(NH$_3$)$_6$-Cl$_3$; m.w. 267.50; monocl. or.; s.g 1.702; s.w.; i.al.

cobaltichloride tetrammine. [Co(NH$_3$)$_4$-(H$_2$O)Cl]Cl$_2$; m.w. 251.45; rhomb. grn.; s.g. 1.847; s.w.; i.al.

cobalticyanic acid. [H$_3$Co(CN)$_6$]$_2$·H$_2$O; m.w. 454.04; col. need., deliq.; s.al.

cobaltite (cobalt glance). A mineral, CoAsS; cub., silv. wh., redsh. or grayish; sp.gr. 6.0-6.3; hardness 5-6.

Coblac. A carbon pigment lacquer chip consisting of ½ second cellulose nitrate 66.7%, dibutyl phthalate 20%, carbon black 13.3%.

l-cocaine (benzoylmethylecgonine). C$_8$H$_{12}$N(OOCC$_6$H$_5$)(COOCH$_3$); m.w. 303.17; col. monocl. pr. f. al.; m.p. 98; s.al.

l-cocaine, cinnamyl-. C$_{19}$H$_{23}$NO$_4$; m.w. 329.19; need. f. bz.; m.p. 121; i.w.; s.al.

l-cocaine, chromate. C$_{17}$H$_{21}$NO$_4$·-H$_2$CrO$_4$·H$_2$O; m.w. 422.66; or. yel. leaf.; m.p. 127; s.w.

l-cocaine, hydrochloride. C$_{17}$H$_{21}$NO$_4$·-HCl; m.w. 339.64; col. monocl. pr. f.al.; m.p. 197; s.w.; s.al.

coccus. Bacterium having spherical form; see also cochineal.

cochineal (coccus). The dried bodies of female insects from which carmine, a red pigment, is obtained, which is used in the dyeing and ink industries, in medicine, and as a food-coloring agent.

cockled (cockling). Curliness or crimping in textile fabrics when different sizes or varying tensions on the yarns are accidently introduced.

cockling. See cockled.

cocoa. See cacao.

cocoanut oil. See oil, cocoanut.

coconut amine. Product used in ore flotation as selective collectors, as insecticide ingredients, textile finishes, rust-proofing metal surfaces.

coconut butter. See oil cocoanut.

coconut oil. See oil, cocoanut.

coction. Boiling of soap in manufacturing.

cod oil. See oil, cod.

cod liver oil. See oil, cod liver.

codamine. C$_{20}$H$_{25}$NO$_4$; m.w. 343.20; pr.; m.p. 121; s.w.; s.al.

codeine (morphine methyl ether). C$_{18}$H$_{21}$NO$_3$·H$_2$O; m.w. 317.19; col. rhomb. octahdr. (+1H$_2$O). f.w.: m.p. anh. 155; s.w.; s.al.

codeine, hydrochloride. C$_{18}$H$_{21}$NO$_3$·-HCl·2H$_2$O; m.w. 371.67; col. need.; m.p. anh. 264; s.w.; s.al.

codeine, phosphate. C$_{18}$H$_{21}$NO$_3$·-H$_3$PO$_4$·2H$_2$O; m.w. 433.25; col. need. or efflor. powd.; s.w.

codeine, sulfate. (C$_{18}$H$_{21}$NO$_3$)$_2$·H$_2$SO$_4$·-5H$_2$O; m.w. 786.50; col. rhomb.

coefficient of discharge. See discharge, coefficient of.

coefficient of dispersion. See dispersion.

coefficient of electrical corrosion. See corrosion efficiency.

coefficient of friction between two surfaces. Ratio of the force required to move one over the other to the total force pressing the two together.

coefficient of linear expansion. The ratio of the change in length per degree to the length at 0° C.

coefficient of restitution. The ratio of the difference in velocity before impact of two bodies to the difference after impact.

coefficient of viscosity. The force required per unit area to maintain unit difference of velocity between two parallel planes in the fluid, one centimeter apart.

Coehn law. Substances of greater dielectric constant (in electric osmosis) assume a higher potential than those of lower dielectric constant to an extent that is proportional to their dielectric constants.

coenocytic. Non-septate structure of molds.

coenzyme. Substance which increases the activity of an enzyme.

coercive force. Magnetic intensity necessary to reduce magnetic induction, in a magnetized material, to zero.

coercivity. Magnetic intensity necessary to reduce magnetic induction, in a material magnetized to saturation, to zero.

coerulignone. See cerulignone.

Coethloblak. A black coloring material for ethyl cellulose products consisting of 62.5% ethylcellulose, 31.25% carbon black and 6.25% linseed oil fatty acid, used in nitrocellulose lacquers, synthetic resins, oil paints, alcohol finishes.

cognac oil. See heptyl ether.

coherence. Two wave trains so related that when brought into coincidence produce interference phenomena.

coherer. Cell which becomes highly conductive only when subjected to an electrical field.

cohesion. Property which prevents separation of a substance into parts when acted on by external forces; attraction between the molecules of a substance.

cohesion, specific. See specific cohesion.

cohobation. Continuous or repeated distillation process.

coincidence method. Timing of a periodic phenomenon by noting coincidences between occurrences and those of known periods.

coir. Fiber from coconut shells.

coke. Strong porous residue consisting of carbon and mineral ash formed when bituminous coal is heated in the absence of air.

coke breeze. Coke of less than ½-inch size.

coke oven. Ovens used to produce coke by the carbonisation of coal.

coke oven gas. See coal gas.

coke, petroleum. See petroleum coke.

coke pitch. See pitch, coke.

cola nut (kola nut). Nut containing caffeine and used in medicine.

colalin. See cholic acid.

Colasta. Synthetic tar-acid resin.

l-colchicine. C$_{22}$H$_{25}$NO$_6$; m.w. 399.20; yel. varnish; yel. need. f.et.ac.; m.p. anh. 143-7; s.w.; s.al.

l-colchicine, compd. with chloroform. C$_{22}$H$_{25}$NO$_6$·CHCl$_3$; m.w. 518.58; need. f. chl.

cold emission. See field emission.

cold flow. See flow, cold.

cold molding. Shaping the composition at ordinary temperatures followed by hardening by subsequent baking.

cold process soap. Soap made by treating oils with alkali at about 35° C.

cold-short iron. Iron that is weak and brittle when cold because of its phosphorus content.

cold test. Test used to determine temperature of separation of wax from a lubricating oil or the point at which the oil will no longer flow.

colemanite. A mineral, Ca$_2$B$_6$O$_{11}$·5H$_2$O; monocl., col. to wh. or yelsh.; sp.gr. 2.417-2.428; hardness 4.0-4.5; principle natural source of borax, boric acid, etc.

collagen. Most abundant protein of the skin constituting bulk of substance of white fibers of the connective tissues of the derma.

collastic. General name for any synthetic rubber; see synlastic.

collaurin. Colloidal gold.

collector. Compound aiding in carrying ore into froth during flotation process, e.g. potassium ethyl xanthate; exploring electrode used in vacuum tubes; device for measuring atmospheric vertical potential gradient.

collector, frothing. Collector (q.v.) which also produces a stable foam.

α-collidine (4-ethyl-2-methylpyridine). CH$_3$C$_5$H$_3$NC$_2$H$_5$; m.w. 121.09; col. liq.; b.p. 179; s.w.; s.al.

β-collidine (3-ethyl-4-methylpyridine). CH$_3$·C$_5$H$_2$N·C$_2$H$_5$; m.w. 121.09; col. liq.; b.p. 195-6; i.w.; s.al.

γ-collidine (2, 4, 6-trimethylpyridine). (CH$_3$)$_3$C$_5$H$_2$N; m.w. 121.09; col. liq.; b.p. 172; s.w.; s.al.

colligative property. A property independent of the chemical nature of the molecules of a substance or how they are combined, but solely dependent upon the number present.

collimater. A telescope arranged to transmit a parallel beam of light.

collision probability. Number of collisions, per unit electron current, per unit path length, per unit pressure at 0° C of electrons with gas atoms.

collodion. A solution of nitrated cellulose in alcohol and ether, used in photography and medicine.

colloid. See colloidal solution.

colloid mill. A machine consisting of a high speed rotor and a stator, emulsification being effected between the opposing faces.

colloid, protective. See protective colloid.

colloidal clay. See bentonite.

colloidal dispersion. See colloidal solution.

colloidal electrolyte. See electrolyte, colloidal.

colloidal fuel. See fuel, colloidal.

colloidal graphite. See graphite, colloidal.

colloidal metal. A colloidal dispersion of a metal, e.g. colloidal gold.

colloidal solution. Solutions intermediate in character between a true solution and a suspension; a dispersion where the particle size is between 1 and 100 μμ where a μμ = 10^{-6} mm.; colloids have little or no tendency to dialize and small or no freezing point depression, etc.

colloidal sulfur. See sulfur, colloidal.

Colloresin. Methyl cellulose.

collotype. Photomechanical printing process (halftone) based on lithographic method.

colocynth. The peeled, dried fruit of a plant found in Asia Minor, used in medicine as a cathartic.

cologarithm. Reciprocal of the logarithm of a given number.

cologne spirits. A purified grade of ethyl alcohol.

colonial spirits. A purified grade of methyl alcohol.

colophony. See gum rosin and rosin, wood.

color. Substance used as a pigment or dye; a property or attribute of light, distinct from form and shade, by which objects distinguish themselves and which depends upon the effect of different wave lengths of light on the retina of the eye.

color base. Colorless base of certain basic dyes whose salts are colored.

color filter. Colored transparent medium which absorbs and transmits certain colors.

color lake. Insoluble product made by precipitating a dyestuff upon an inorganic material such as china clay or barium sulfate.

color scale. A linear series of colors showing gradual transition from one hue to another or a similar series of tones of one hue.

color stability. Resistance of oil to discoloration under influence of light, age, etc.

color temperature. Temperature of a black body in color match with a radiating body.

coloradoite. A natural mercury telluride.

colorimeter. An instrument used to measure the relative intensity of color in solutions and, hence, by comparison with standards of the quantities of substance present.

colorimetric analysis. Analysis based on the law that the color of certain solutions is proportional in intensity to the amount of substance in the solution.

colorimetry. See colorimetric analysis.

colors, complementary. In pigments, two colors which when blended produce a neutral or gray; in speaking of light, two colors which produce a white effect when mixed, e.g. blue and orange pigments are complementary colors.

colors, primary. Fundamental colors which, by proper combination, produce all others, e.g. red, yellow and blue in pigments and red, green and blue-violet in light. Mixing red and yellow pigments produces orange.

Coltrock. Synthetic tar-acid resin.

columbian spirits. A high grade methyl alcohol similar to colonial spirits.

columbic acid. $3Cb_2O_5 \cdot 7H_2O$; m.w. 925.91; steel gray; s.g. 7.06; i.w.

columbite (niobite). A mineral, $(Fe,Mn)(Cb,Ta)_2O_6$; rhomb., br. to blk.; sp.gr. 5.26-7.30; hardness 6.

columbium (niobium). Cb(Nb); m.w. 92.91; rhomb. s.g. 8.4; m.p. 1950; b.p. 2900; i.w. valence 3 or 5; a very rare metallic element; gray, lustrous; prepared by reduction of the oxide in the electric furnace; occurs in the mineral niobite or columbite. It forms the acid oxide Cb_2O_5, from which the salts are derived.

columbium bromide. $CbVr_5$; m.w. 492.88; purp. red.

columbium chloride. $CbCl_5$; m.w. 270.59; yel.-wh., deliq.; s.g. 2.75; m.p. 194; b.p. 240.5; s.al.

columbium fluoride. CbF_5; m.w. 188.30; monocl. pr., col.; s.g. 3.293 [18]; m.p. 75.5; b.p. 236; s.al.

columbium hydride. CbH; m.w. 94.31; gray powd.; s.g. 6.6. i.al.

columbium hydroxide. $Cb(OH)_5$; m.w. 178.34; wh. amor.; i.w.

columbium nitride. CbN; m.w. 107.31; blk.; i.al.

columbium oxalate. $Cb(HC_2O_4)_5$; m.w. 538.34; monocl.

columbium oxide, di-. CbO_2; m.w. 125.30; blk.; i.w.

columbium oxide, mon-. CbO; m.w. 109.30; cubic; s.g. 6.3-7.

columbium oxide, pent-. Cb_2O_5; m.w. 266.60; rhomb. wh.; s.g. 4.47; m.p. 1520; i.w.

columbium oxybromide. $CbOBr_3$; m.w. 349.05; yel. cryst. subl.; d. in w.; s.al.

columbium oxychloride. $CbOCl_3$; m.w. 215.67; need. col.; sp.gr. 10.19 [400] g/l; s.al.

columbium oxysulfide. Cb_2OS_2; m.w. 298.78; blk.; i.w.

columbium potassium fluoride. $CbOF_3 \cdot 2KF \cdot H_2O$; m.w. 300.52; monocl. leaf. col.

colza oil. See oil, rapeseed.

columnar ionization. Ionization of gases by alpha particles.

coma. Hazy border surrounding an object viewed thru imperfect lens.

combination defect. Error caused by using combination principal for certain molecular spectra.

combination line. Atomic spectral line formed by a transition between two multiplet energy levels.

combination principle. Existence of spectral lines can be predicted by calculating quantum energy and frequency that results from transition of an electron from stable state to another.

combination series. Series of spectral lines produced in accord with combination principle.

combining. Joining of two materials by means of an intervening layer of rubber or other plastic or adhesive.

combining equivalent. See combining weight.

combining proportion. The proportion of substances in which chemical combination takes place.

combining volumes, law of. When gases combine they do so in volumes which bear a simple relationship to each other, and to that of the product, if that is also gaseous.

combining weight. See equivalent weight.

combustion, surface. See surface combustion.

comfordite. See phosgenite.

Cominol. A derivative of a higher sulfonated alcohol used as a wetting agent and detergent in the textile industry.

common banded coal. The common variety of bituminous and subbituminous coal consisting of irregularly alternating layers or lenses.

commutation. Reversal of direction of flow of an electrical current.

commutator. Device for reversing direction of an electric current.

comolized. Highly aggregated.

compandor. Combination of compressor and expander for getting increased speech-noise ratio in radio-telephony.

comparator. Device for measuring short distances.

compatability. Ability to mix together without separation or reaction.

compensating coil. Winding for neutralizing armature field in motors and dynamos.

compensator. Auto-transformer; device for measuring phase difference between two components of elliptically polarized light.

complement. Heat-labile substance found in blood; difference between degrees in an angle and 90°.

complementary angle. One of two angles whose sum is 90°.

complementary colors. See colors, complementary.

complex cyanide. A compound in which the cyanide is combined coordinately and hence will not give a test for cyanide ions, e.g. $K_4Fe(CN)_6$.

complex ion. Ion formed by the union of an ion by coordinate linkage to atoms or molecules, e.g. copper ammonium complex, $Cu(NH_3)_4^{++}$.

complex (non-Newtonian) liquid. One in which rate of shear is not proportional to shearing stress.

complex number. An ordered couple of real numbers, e.g. $(\frac{1}{2}, \sqrt{2})$.

complex salt. Double salt (q.v.) of a more stable type.

complex spectrum. Spectrum having multiplet lines.

complexion. Specified set of values of co-ordinates and momenta of molecules or other particles, comprising a system, considered as a distribution of the particles among the phase-space elements.

compliance. Ratio of the change in length to the force applied on a spring.

compo. Lime gauged with Portland cement.

component. The least number of independently variable constituents required to express the composition of each phase of a system of equilibrium is defined as the number of components of the system; any of a set of vector quantities, the total of which is equivalent to a given quantity.

composition of forces. The method of determining the resultant of a set of forces.

composition of matter. Patent description of an intermixture of two or more ingredients which develop a different or additional property or properties which the several ingredients, individually, do not have in common.

compound, chemical. A substance composed of two or more elements combined according to the laws of chemical combination.

compound, heteropolar. See polar compound.

compound, homopolar. See homopolar compound.

compound, ionic. See polar compound.

compound, polar. See polar compound.

compound, proto. See proto compound.

compound radical. See radical.

compound-wound. Windings of a dynamo partly in series and partly in parallel with the external circuit.

Compreg. Hardwood impregnated with phenol-formaldehyde resin used for airplane propellers.

compressibility. Fractional decrease in volume divided by the increment in pressure.

compression ratio. Ratio of volume above the piston at the lowest point of piston travel to the volume above it at the highest point in its travel.

compressive strength. Resistance to deformation under applied pressure.

Compressor. A pump which draws in air or other gases compresses it and discharges it at a higher pressure.

Compton effect. Part of scattered radiation, having a wave length somewhat greater than that of the incident radiation, formed when a wave-train of x-rays sweeps over an atom.

Compton electron (recoil electron). Electron with momentum due to impact of high-energy radiation quantum.

Compton shift. Change in wave length of x-ray quantum on scattering by electronic impact.

conarachin. A globulin, containing amino acids, derived from peanut meal.

concavo-convex (concave-meniscus). Referring to a lens having concave and convex surfaces where the former has greater curvature than the latter.

concentrate. Valuable mineral constituent separated from gangue.

concentration. Process of increasing the amount of a substance in solution or admixture; the expression of the amount present of a substance, e.g. grams of salt present per liter of solution.

concentration cell. Electrolytic cell having different concentrations between different parts of the electrolyte.

concrete. A mixture of cement, sand and broken stone, used in construction work.

concrete, perfume. Extract of aromatic materials with volatile solvents which are removed later by vacuum distillation.

concurrent lines. Three or more lines intersecting at same point.

condensation. A chemical reaction in which two or more molecules combine with the separation of water or so other simple substance; see polym zation; change from vapor to liq state by cooling.

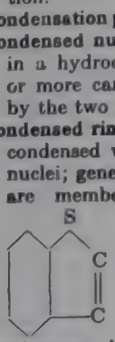
condensation coefficient. Total volu of molecules of a gas divided by volume.

condensation, partial. See dephleg tion.

condensation product. See condensati

condensed nuclei. Two or more nu in a hydrocarbon molecule with t or more carbon atoms shared join by the two or more nuclei.

condensed ring. A heterocyclic nucl condensed with one or more bens nuclei; generally two atoms of carb are members of both rings, s



condenser. A conductor having nea an infinite direct current resistan e.g. two electrodes separated by insulator; device for changing gas vapor to a liquid; set of strong converging lenses arranged to co centrate light on an object or slide a projector.

condenser, by-pass. Condenser separating alternating from dire electrical current.

condenser, electrolytic. Condens utilizing aluminum electrodes wh surfaces have been oxidized to form insulating layer, the latter bei covered with a viscous conducti liquid or paste.

condenser, Liebig's. See Liebig's co denser.

conditioning. Placing of fibers in humidified atmosphere to allow the to take up normal amount of moistur amount of moisture taken up is t regain.

conductance. The reciprocal of electri resistance.

conductance dispersion. Change equivalent conductance of an electr lyte for an alternating current changing frequency.

conductance, specific. See conductivi

conductiometric method. Method analysis in which the end-point of reaction is determined by conductan measurements.

conduction. Flow of heat thru a body the transference of momentum individual molecules without mixi

conduction electron. An electron fr outer levels of atoms concerned w electrical conduction in metals.

conductivity (specific conductance). T reciprocal of specific resistance (q.v

conductivity, molecular. See molecu conductivity.

conductivity, thermal. Rate of he flow in a homogeneous material unc steady conditions, per unit area, a per unit temperature gradient direction perpendicular to area.

conductor. Body which is incapab of supporting electric strain.

Condy's fluid. A solution of potassi permanganate used as a disinfecta

cone of friction. Conical surface, wit which always lies the line of t resultant of the friction between t surfaces and the normal force pressi them together.

cone of rupture. Double conical surfa along which a solid cylinder, wh subjected to severe longitudinal co pression, tends to crack and slip.

configuration interaction. Disturbi effect of one arrangement of aton electrons, as shown by the assign quantum numbers, upon another su arrangement, that the energy lev and spectral terms corresponding the two arrangements are chang with respect to their values when such interaction exists.

conformability. The property of

aring that permits it to deflect or
tort enough to give a more uniform
tribution of pressure.
elation. Freezing or solidification.
lomerate. Rounded pebbles ce-
nted into solid rock by deposition
mineral matter around and among
em.
go gum. See gum, Congo.
go red. A dyestuff used to dye wool
cotton red, and as an indicator in
emical analysis.
ydrine (α-hydroxyconiine; 2-[α-
ydroxypropyl] piperidine). C_8H_{17}-
O; m.w. 143.14; col. cr. f. et.; m.p.
1., b.p. 226; s.w.; s.al.
nhydrine. See pseudoconhydrine.
c section. Curve formed by inter-
ction of a plane with a right circular
ne.
cal refraction. Transformation of
light ray into a hollow cone by
fraction, at a suitable angle of
cidence, in a biaxial crystal.
niceine. $C_8H_{15}N$; m.w. 125.13; col.
q. (mixt. ?); m.p. −16; b.p. 158; s.w.
niceine (2-allylpiperidine). $C_8H_{15}N$;
.w. 125.13; col. need.; m.p. 39-41;
p. 168-9; s.w.; s.al.
niceine (1, 2, 3, 4-tetrahydro-
-propylpyridine). $C_8H_{15}N$; m.w.
25.13; col. liq.; m.p. > −50; b.p.
72; s.w.; s.al.
niceine. See piperolidine.
niceine (methylconidine). $C_9H_{15}N$;
.w. 125.13; liq.; b.p. (d) 151-4; (l)
43-5; (dl) 150-1; s.al.
idine, methyl-. See ε-coniceine.
idiophore. Thread or stalk bearing
onidia.
idium. An asexual spore formed by
ungi.
iferin. $C_{16}H_{22}O_8 \cdot 2H_2O$; m.w. 378.20;
lit. need. (+$2H_2O$); m.p. anh. 185;
al.
iferyl alcohol (3-[4-hydroxy-3-meth-
xyphenyl]-2-propen-1-ol; 4-hydroxy-
-methoxycinnamic alcohol; γ-hyroxy-
soeugenol). $(CH_3O)(OH)C_6H_3CH$:-
$CHCH_2OH$; m.w. 180.09; pr.; m.p.
73-4; s.w.; s.al.
coniine (d-2-propylpiperidine).
$C_8H_{15}N \cdot C_8H_7$; m.w. 127.14; col. oily.
iq.; m.p. −2.5; b.p. 166.5; s.al.
coniine, hydrochloride. $C_8H_{17}N \cdot HCl$;
n.w. 163.61; col. rhomb. f.w.; m.p.
220; s.w.; s.al.
iine, α-hydroxy-. See conhydrine.
coniine, picrate. $C_8H_{17}N \cdot C_6H_3N_3O_7$;
n.w. 356.19; yel. need. f.h.w.; m.p.
75; s.al.
nium. See hemlock.
njugate axis. Shortest diameter of
an oval or ellipse.
njugate branches. Two divisions of an
electrical system such that an e.m.f.
n one produces no current in the other.
njugate points. Two points in an
optical system each of which is the
image of the other.
njugate foci. Points of convergence
and position of the source of light
which are interchangeable.
njugate vector. Vector whose real
parts are equal and whose imaginary
parts are equal but of opposite sign.
njugated protein. Compound in which
a simple protein is united with some
other molecule other than as a salt,
e.g. mucin.
njugated system. Chemical system
characterized by a transmission of
chemical reactivity from one atom to
another.
njugation. Reproduction by fusion
of two cells (gametes) of similar size.
nnellite. A mineral, $CuSO_4 \cdot 2CuCl_2 \cdot$-
$19Cu(OH)_2 \cdot H_2O$; hex., blue; sp.gr.
3.4.
noid. Cone shaped.
noquinamine. $C_{19}H_{24}N_2O_2$; m.w.
312.20; yel. tetr.; m.p. 123; s.al.
noquinine. See quinidine.
nradson carbon. Residue left on
heating and evaporating a lubricating
oil under specified conditions.
nsequant pole. Magnetic pole in
excess of the two usually present in a
magnetic body.

conservation of energy, law of. The total amount of energy in any closed system, remains constant.

conservation of matter, law of. The total amount of matter in the universe is unaltered, whatever changes take place in its distribution; matter cannot be created or destroyed.

conservative field. A field of force, in which the work done by a particle moving from one point to another is dependent only on its initial and final position and not on its path.

conservative system. System of bodies acted upon only by forces in the system so that the dynamical energy of the system is constant.

consistency. Resistance to deformation; ratio of shearing stress to rate of shear.

consistency line. Curve showing rise in temperature of a substance as heat is introduced at a constant rate; a measure of behavior of fatty material on melting.

consistometer. An instrument used to determine the consistency or hardness of certain liquids and solids.

consolute. A term meaning miscible in all proportions.

consolate temperature. See critical solution temperature.

constant. Mathematical factor determined by experiment; an invariable quantity under certain conditions; a determined value of chemical substances, e.g. specific gravity, melting point, atomic weight, etc.

constant boiling mixture. Minimum or maximum boiling mixture where the vapor has the same composition as the boiling liquids.

constant deviation prism. Triangular prism built so that deviation of a light ray, entering one face and leaving thru another, after internal reflection at the third face is always equal to the angle between the two refracting faces.

constant error. See error, constant.

constant heat summation law (Hess' law). The heat of a reaction is independent of the method used to produce the resultant.

constant proportions, law of. When combination takes place between elements, it is in definite proportions by weight, so that the composition of a pure chemical compound is the same, no matter how it is prepared.

constant yield oil (C.Y.O.). Dispersing medium of non-reactive solvents used in molecular distillation.

constantan. Low temperature coefficient of resistence alloy of 60% copper and 40% nickel.

constitutive property. Property dependent on arrangement and not on quantity of atoms or molecules in a substance.

constrained motion. Motion of a body confined by material barriers to a given path.

constraint, principle of least. The deviations of motions of a number of interconnected masses acted on by forces is as little as possible as compared to same disconnected masses acted on by same forces.

contact acid. Sulfuric acid made by the contact process.

contact angle. The angle of the interface between two fluids meeting a solid.

continuity, equation of. Equation for law that the volume of liquid passing per second at a constant rate thru a tube of varying cross-section is equal at all points.

continuous spectrum. Structureless spectrum appearing to show a continuous variation of wave length, such as emitted by incandescent solid substances.

contour (contour line). Line passing thru all points at a given height above an assumed level (datum-line or plane); wave-length intensity curve for a particular spectral line or band.

contrast gloss. See gloss, contrast.

convection. Flow of heat by actual mixing or physical turbulence of liquids.

conversion factor (change-ratio). Constant, which converts value of a physical quantity in one set of units to another set of units, by multiplication.

converter. Type of blast furnace for oxidising impurities in molten metals by blowing air through the metal; also see transformer.

convexo-concave. Possessing two curved surfaces; one being convex, the other concave, the latter having a lesser curvature than the former.

conveyor. A device, continuous or otherwise, for transporting material from one place to another.

conylene (octadiene [one form]). C_8H_{14}; m.w. 110.11; liq.; b.p. 126 [733]; s.al.

conyrine (2-propylpyridine). C_8H_7-C_5H_4N; m.w. 121.09; liq.; m.p. 2; b.p. 165; s.w.; s.al.

Coolidge tube. X-ray tube with a cathode having a hot filament giving off cathode ray electrons by thermionic emission.

cooling, Newton's law of. The rate at which a hot body loses heat is proportional to the difference in temperature between the body and its surroundings.

coordinate. One of a system of lines for determining positions or values; one of a group of variables showing condition or action of a physical system; referring to coordination compound (q.v.).

coordinate link. See semi-polar bond.

coordination. See co-ordination compound.

coordination compound. Compound in which at least two elements share a pair of electrons between them, both electrons being contributed by only one element; belonging to the general class of covalent or non-polar compounds, e.g. hexammine platinic chloride, $Pt(NH_3)_6Cl_4$, where the NH_3 are coordinately attached to the platinum.

coordination lattice. Crystal lattice wherein each ion bears the same relation to its adjacent ions in all three coordinate directions.

coordination number. The maximum number of atoms or groups that can be attached to a central atom, e.g. platinum has a coordination number of 6, carbon has a coordination number of 4.

coordination rule. Magnetic sublevels of a multiplet (spectral line) in weak fields are coordinated with the magnetic levels of the component vectors in strong fields.

cop. Yarn package produced by textile "mule."

copahyba oil. See copaiba balsam.

Copaiba balsam. A yellow, viscous, transparent oleo-resin obtained from the South American copaiba and used in medicine, varnishes, and lacquers.

Copal resin. A natural resin used in varnishes, lacquers, amber subsitutes, etc.

copiapite. A mineral, $2Fe_2O_3 \cdot 5SO_3 \cdot$-$18H_2O$; monocl., yel.; sp.gr. 2.1-2.2; hardness 2.5.

copolymer (mixed polymers; heteropolymers). Product of a copolymerization (q.v.).

copolymerization. Term applied when two or more substances polymerize at the same time to yield a product which is not a mixture of separate polymers but a complex having properties different from either polymer alone, e.g. vinylite from polymerization of a mixture of vinyl chloride and vinyl acetate.

copper. Soap making pan or kettle.

copper. Cu; m.w. 63.57; cub.; s.g. 8.92; m.p. 1083; b.p. 2310; i.w.; a metallic element, reddish, of metallic lustre, malleable and ductile, an excellent conductor of heat and electricity; occurring native and in numerous compounds. It is obtained free by smelting, leaching or electrolysis, finds extensive use as an electrical conductor and in many alloys. The most important compounds are the oxide, CuO, and the sulfate.

copper, native. The metal as it occurs naturally; cub., red; sp.gr. 8.8-8.9; hardness 2.5-3.0.

copper acetate(ic). $Cu(C_2H_3O_2)_2 \cdot H_2O$; m.w. 199.63; dk. grn. powd.; s.g. 1.882; m.p. 115 b.p. 240 d.; s.w.; s.al.

copper acetate, ammoniated(ic). $Cu(C_2H_3O_2)_2 \cdot 2NH_3$; m.w. 215.68; vlt.-bl. cr. s.w.; i.al.

copper acetate, basic. $CuO \cdot$-$Cu(C_2H_3O_2)_2 \cdot 6H_2O$; m.w. 369.28; grnsh.-bl. powd.; s.w.; s.al.

copper acetylide(ous). $Cu_2C_2 \cdot H_2O$; m.w. 169.16; amor. red; m.p. exp.; s.w.

copper ammonium chloride(ic). $CuCl_2 \cdot$-$2NH_4Cl \cdot 2H_2O$; m.w. 277.51; tetr. blue; s.g. 1.98; s.w.; s.al.

copper ammonium iodide(ous). $CuI \cdot$-$NH_4I \cdot H_2O$; m.w. 353.46; rhomb. pl.

copper ammonium sulfate(ic). Cu-$(NH_4)_2(SO_4)_2 \cdot 6H_2O$; m.w. 245.77; rhomb. bl.; d150; s.w.; i.al.

copper arsenate, ortho-(ic). $Cu_3(AsO_4)_2 \cdot 4H_2O$; m.w. 540.63; bluish grn.; i.w.

copper arsenate, ortho- acid(ic). $Cu_5H_2(AsO_4)_4 \cdot 2H_2O$; m.w. 911.62; blue; i.w.

copper arsenide(ic). Cu_6As_2; m.w. 467.71; oct. bl.; s.g. 7.56; i.w.

copper arsenite(ic). $Cu_3(AsO_3)_2$; yel.-gr. powder; s.w.

copper arsenite, aceto-(ic) (Paris green). $(CuOAs_2O_3)_3 \cdot Cu(C_2H_3O_2)_2$; m.w. 1013.91; em. grn. powd.; i.w.; i.al.; pigment and insecticide.

copper arsenite, ortho- acid(ic). (Scheele's green or Paris green). $CuHAsO_3$; m.w. 187.51; green powd.; i.w.; s.al.

copper, azure. See copper carbonate blue.

copper benzoate(ic). $Cu(C_6H_5CO_2)_2 \cdot$-$2H_2O$; m.w. 341.68; lt.-bl. cr. powd.; s.w.; s.al.

copper, blister. Semi-refined copper in slabs having a blistered surface and containing about 99% copper, the balance being other metallic impurities.

copper blue. See mountain blue.

copper borate(ic). $CuBO_4$; m.w. 138.39; bluish-grn. cr. powd.; s.w.

copper boride. Cu_3B_2; m.w. 212.35; yel.; s.g. 8.116.

copper bromate(ic). $Cu(BrO_3)_2 \cdot 6H_2O$; m.w. 427.50; cub. bl. grn.; s.g. 2.583; b.p. $-6H_2O$, 200; s.w.

copper bromide(ic). $CuBr_2$; m.w. 223.40; monocl. blk., deliq.; m.p. 498; s.w.; s.al.

copper bromide(ous). Cu_2Br_2; m.w. 286.97; cub., tetrah. wh : s.g. 4.72 [12]; m.p. 504; b.p. 1345; s.w.

copper butyrate(ic). $Cu(C_4H_7O_2 \cdot 2H_2O$; m.w. 273.71; dk.-grn. cr.; odor butyric a.; s.w. s.al.

copper carbonate(ic), (azurite). $2CuCO_3 \cdot Cu(OH)_2$; m.w. 344.73; monocl. bl.; s.g. 3.88; i.w.

copper carbonate(ous). Cu_2CO_3; m.w. 187.14; yel.; s.g. 4.40; i.w.

copper carbonate, basic(ic) (malachite). $CuCO_3 \cdot Cu(OH)_2$; m.w. 221.16; monocl. dk. grn.; s.g. 4.0; i.w.; i.al.

copper carbonate blue (artificial blue malachite, azure copper, Bremen blue). Variable basic copper carbonate, blue powd.; i.al., i.w.; used in pyrotechnics and as a pigment.

copper carbonate, green. See malachite.

copper chlorate(ic). $Cu(ClO_3)_2 \cdot 6H_2O$; m.w. 338.58; cub. grn.; deliq.; m.p. 65; s.w.; s.al.

copper chloride(ic) (eriochalcite). $CuCl_2$; m.w. 134.48; br. yel. powd.; s.g. 3.054; m.p. 498; s.w.; s.al.

copper chloride(ic) (hydrated). $CuCl_2 \cdot 2H_2O$; m.w. 170.52; rhomb. grn., deliq.; s.g. 2.39 [23.4]; m.p. $-2H_2O$, 110; s.w.; s.al.

copper chloride(ous) (nantokite). Cu_2Cl_2; m.w. 198.05; cub. wh.; s.g. 3.53; m.p. 422; b.p. 1366.

copper chromate. See copper chromate, basic(ic).

copper chromate, basic (ic). $CuCrO_4 \cdot 2CuO \cdot 2H_2O$; m.w. 374.75; yel.-br.; m.p. $-2H_2O$, 260; i.w.; i.al.; used in dyeing.

copper chromate, di- (ic). $CuCr_2O_7 \cdot 2H_2O$; m.w. 315.62; blk. cryst.; deliq.; s.g. 2.286 [18]; s.w.; s.al.

copper cyanide(ic). $Cu(CN)_2$; m.w. 115.59; yel.-grn. powd.; i.w.

copper cyanide(ous). $Cu_2(CN)_2$; m.w. 179.16; monocl. wh.; s.g. 2.92; m.p. 474.5; i.w.

copper ferricyanide(ic). $Cu_3[Fe(CN)_6]_2$; m.w. 614.49; yel.-grn.; i.w.

copper ferricyanide(ous). $Cu_3Fe(CN)_6$; m.w. 402.60; br.-red; i.w.

copper ferrocyanide(ic). $Cu_2Fe(CN)_6 \cdot 7H_2O$; m.w. 465.14; red. br.; i.w.

copper ferrocyanide(ous). $Cu_4Fe(CN)_6$; m.w. 466.17; br.-red.; i.w.

copper fluoride(ic). $CuF_2 \cdot 2H_2O$; m.w. 137.60; monocl. bl.; s.g. 2.93; s.w.; s.al.

copper fluoride(ous). Cu_2F_2; m.w. 165.14; red. cryst.; m.p. 908; i.w.; i.al.

copper fluosilicate(ic). $CuSiF_6 \cdot 4H_2O$; m.w. 277.69; monocl. pr.; s.g. 2.158; s.w.
$CuSiF_6 \cdot 6H_2O$; m.w. 313.72; rhomb. bl., deliq.; s.g. 2.207; s.w.; s.al.

copper fluosilicate(ous). Cu_2SiF_6; m.w. 269.20; red. powd.

copper fluosilicate, tetrapyridine (ic). $Cu(C_5H_5N)_4SiF_6$; m.w. 521.82; rhomb. purpsh.-bl.; s.g. 2.108.

copper formate(ic). $Cu(CHO_2)_2$; m.w. 153.59; monocl. bl.; s.g. 1.831; s.w.; s.al.

copper-head. Small reddish-brown spot on fired ground coat enamel.

copper hydride. Cu_2H_2; m.w. 129.16; red.-br.

copper hydroxide(ic). $Cu(OH)_2$; m.w. 97.59; bl. gel. or amor. bl. powd.; s.g. 3.368; i.w.; s.al.

copper hydroxide(ous). CuOH; m.w. 80.58; yel.; s.g. 3.37; m.p. $-\frac{1}{2}H_2O$, 360; i.w.

copper index (copper value; copper number). A measure of the per cent. of oxycellulose present in paper, cotton, etc.

copper iodate(ic). $Cu(IO_3)_2$; m.w. 413.41; monocl. grn.; s.g. 5.24 [15]; i.w.

copper iodate(ic) (hydrated). $Cu(IO_3)_2 \cdot H_2O$; m.w. 431.43; tricl. bl.; s.g. 4.876 [15]; m.p. $-H_2O$, 240; i.al.

copper iodate, basic (ic). $Cu(OH)IO_3$; m.w. 255.50; rhomb. grn.; s.g. 4.878 [18]; i.w.

copper iodate, per-(ic). Cu_2HIO_6; m.w. 351.07; grn. powd.; i.w.

copper iodide(ous) (marshite). Cu_2I_2; m.w. 380.98; cub. wh.; s.g. 5.63 [15.5]; m.p. 605; b.p. 1290; i.al.

copper lactate(ic). $Cu(C_3H_5O_3)_2 \cdot 2H_2O$; m.w. 277.68; monocl. dk. bl.; s.w.; s.al.

copper naphthenate. A green solid used to preserve cloth, wood, paint against mildew, dry rot, barnacle growth.

copper nitrate(ic). $Cu(NO_3)_2 \cdot 3H_2O$; m.w. 241.63; blue, deliq.; s.g. 2.047 [2.9]; m.p. 114.5; b.p. $-HNO_3$, 170; s.w.; s.al.
$Cu(NO_3)_2 \cdot 6H_2O$; m.w. 295.68; bl. cr.; s.g. 2.074; m.p. $-3H_2O$, 26.4; s.w.; s.al.

copper nitride. Cu_3N; m.w. 204.72; i.w.; i.al.

copper nitrite, basic (ic). $Cu(NO_2)_2 \cdot 3Cu(OH)_2$; m.w. 448.34; grn. powd.; s.w.; s.al.

copper nitroprusside(ic). $CuFe(CN)_5NO \cdot 2H_2O$; m.w. 315.49; grnsh. powd.; i.w.; i.al.

copper number. See copper index.

copper oleate. $Cu(C_{18}H_{33}O_2)_2$; m.p. 100; i.w.; s.al.; pois.; used in medicine.

copper oxalate(ic). $CuC_2O_4 \cdot \frac{1}{2}H_2O$; m.w. 160.58; bl. wh.; s.w.

copper oxide(ic) (paramelaconite). CuO; m.w. 79.57; cub. blk.; s.g. 6.40; i.w.

copper oxide(ic) (tenorite). CuO; m.w. 79.57; tricl. blk.; s.g. 6.45; i.w.

copper oxide(ous) (cuprite). Cu_2O; m.w. 143.14; cub. red; s.g. 6.0; m.p. 1235; b.p. $-O$, 1800; i.w.; i.al.

copper oxide, sub-. Cu_4O; m.w. 270.28; olive grn.; i.w.

copper oxide, per-. $CuO_2 \cdot H_2O$; m.w. 113.59; olive grn.-br.; i.w.; i.al.

copper oxychloride(ic). $CuCl_2 \cdot 2CuO \cdot 4H_2O$; m.w. 365.69; bl.-grn.; m.p. $-3H_2O$, 140; i.w.

copper palmitate(ic). $Cu(C_{16}H_{31}O_2)_2$; m.w. 574.05; grn.-bl. powd.; m.p. 120; i.w.; s.al.

copper phenolsulfonate. $Cu(C_6H_5SO_4)_2 \cdot 6H_2O$; m.w. 517.86; bl.-grn. cr.; s.w.; s.al.

copper phosphate, ortho- (ic). $Cu_3(PO_4)_2 \cdot 3H_2O$; m.w. 434.80; rhomb. bl.; i.w.

copper phosphide(ic). Cu_3P_2; m.w. 252.75; gray-blk. met. powd.; s.g. 6.67; i.w.

copper phosphide(ous). Cu_3P; m.w. 221.73; gray blk.; s.g. 6.4-6.8.

copper phosphite, ortho- (ic). $CuHPO_3 \cdot 2H_2O$; m.w. 179.63; i.w.

copper potassium cyanide(ous). $CuK_2(CN)_3$; m.w. 284.90; rhbdr. col.; s.w.

copper pyrites. The mineral copper iron sulfide, $CuFeS_2$.

copper resinate. $Cu(C_{20}H_{29}O_2)_2$; gr. powd., pois.; used as preservative in metal paint.

copper rubidium sulfate. $CuRb_2(SO_4)_2 \cdot 6H_2O$. m.w. 534.66; monocl.; m.p. 2.57.

copper salicylate(ic). $Cu(C_7H_5O_3)_2 \cdot 4H_2O$; m.w. 409.71; bl.-grn. need.; s.w.; s.al.

copper selenate(ic). $CuSeO_4 \cdot 5H_2O$; m.w. 296.85; tricl. bl.; s.g. 2.559; s.w.; i.al.

copper silicide. See silicon copper.

copper silicofluoride. See copper fluosilicate.

copper stearate(ic). $Cu(C_{18}H_{35}O_2)_2$; m.w. 630.12; lt. bl. amor. powd.; m.p. 125; i.w.

copper sulfate(ic) (hydrocyanite). $CuSO_4$; m.w. 159.63; grn.-wh. rhomb.; s.g. 3.606 [15]; m.p. 200; s.w.; i.al.

copper sulfate(ic) (blue vitriol or chalcanthite). $CuSO_4 \cdot 5H_2O$; m.w. 249.71; tricl. blue; s.g. 2.286 [15.6]; m.p. $-4H_2O$, 110; b.p. $-5H_2O$, 150; s.w.; i.al.

copper sulfate(ous). Cu_2SO_4; m.w. 223.20; gray powd.; m.p. $+O$, 200.

copper sulfate, ammonio- (ic). $Cu(NH_3)_4SO_4 \cdot H_2O$; m.w. 245.77; rhomb. bl.; s.w.; i.al.

copper sulfide(ic) (covellite). CuS; m.w. 95.63; hex. or monocl. blk.; s.g. 4.6; i.al.

copper sulfide(ous) (chalcocite). Cu_2S; m.w. 159.20; rhomb. blk.; s.g. 5.6; m.p. 1100.

copper sulfide(ous). Cu_2S; m.w. 159.20; cub. blk.; s.g. 5.78; m.p. 1130.

copper sulfite(ous). $Cu_2SO_3 \cdot H_2O$; m.w. 225.22; hex. red or wh.; s.g. 3.83 [15]; s.w.; i.al.

copper sulfocyanide. See copper thiocyanate.

copper tartrate(ic). $CuC_4H_4O_6$; m.w. 211.60; lt.-bl. powd.; s.w.

copper tartrate(ic). $CuC_4H_4O_6 \cdot 3H_2O$; m.w. 265.65; lt. gray bl. powd.; s.al.

copper thiocyanate(ic). $Cu(SCN)_2$; m.w. 179.71; blk. m.p. d 100, d. in w., s.al.

copper thiocyanate(ous). CuCNS; m.w. 121.64; wh.; s.g. 2.846 [4]; m.p. 1084; i.al.

copper tungstate(ic). $CuWO_4 \cdot 2H_2O$; m.w. 347.60; oct. lt. grn.; i.al.

copper uranite. See torbernite (R).

copper value. See copper index.

copperas. See melanterite.

copperas, green. A common name for ferrous sulfate, $FeSO_4 \cdot 7H_2O$; used in water purification, writing inks, Prussian blue, etc.

copping. Rewinding yarn from spools to quills, cops or shuttle bobbins adaptable to looms.

copra. Dried meat of coconut; chief source of coconut oil.

copra cake. Residue after crushing of dried copra in coconut oil mfr.; fed to livestock.

copra meal. Ground copra cake.

coprolite. Mixture of calcium phosphate and calcium carbonate of organic origin, formerly used in the manufacture of fertilizers.

coquimbite. A mineral, $Fe_2(SO_4)_3 \cdot 9H_2O$; hex. (trig.), wh., yelsh., brnsh.; sp.gr. 2.07-2.105; hardness 2.0-2.5.

coquina. A coarse limestone, composed of marine shells.

coracite. A complex uranium mineral.

coral. Calcareous skeletons of coral polyps, consisting chiefly of calcium carbonate.

Corbino effect. A current flows circumferentially when it is sent from center to circumference of a metal disk thru a magnetic field normal to the disk.

cordierite (iolite, dichroite). A mineral, $4(Mg,Fe)O \cdot 4Al_2O_3 \cdot 10SiO_2 \cdot H_2O$; rhomb., lt.-dk. blue; sp.gr. 2.57-2.66; hardness 7.0-7.5.

cordite. Propellant used in British ammunition, a mixture of nitrocellulose, nitroglycerine, and petrolatum.

Cordulan. Cosmetic absorption base.

core. Nucleus plus inner shells of an atom; a bar of soft iron forming the center of an electromagnet or an induction coil.

core binder. Material used to cement together sand particles before or after molding cores are baked, e.g. pitch or rosin compositions.

core loss (iron loss). Power expended in a magnetic material subjected to a varying induction.

core, molding. Body of sand or other refractory material which is prepared separately and is introduced into a mold either during its construction or after the mold proper has been completed.

core oil. See oil, core.

Corekal A. Sodium alkyl naphthalene sulfonate.

Coresinblak. A coloring material used in making alkyd synthetic resin finishes, consisting of 18% carbon black, 32% resin, and 50% solvent.

Cori ester. Glucopyranose-1-monophosphate.

coriander oil. See oil, coriander.

coriandrol. See d-linaloöl.

Coriolis acceleration. See acceleration, complementary.

corn oil. See oil, corn.

corn sugar. See glucose.

corn syrup. See glucose.

cornelian. See carnelian.

cornetite. A natural basic copper phosphate, $Cu_3(PO_4)_2 \cdot 3Cu(OH)_2$.

Cornu prism. 60° quartz prism divided in halves, of right- and left-handed quartz neutralizing optical rotary effect.

cornu spiral. Curve approached as a limit by a succession of vector lines whose lengths and directions represent, respectively, the amplitudes and phases of light vibrations reaching any point from successively more remote areas of a wave front.

corollary. A truth easily deduced from one or more previously proven theorems.

corona discharge. See Townsend discharge.

corona loss. Energy lost as heat or chemical action from high voltage conductors when the electrical stress in the surrounding dielectric is a a critical figure.

corpus luteum. Yellow tissue conta carotene found in the human ov

correlation coefficient. A quantit measure of the relationship bet two series of data on two variable

correlation table (scatter-diagram). plotted record of frequency distr tions of two different characters sh ing the tendency (if present) for character to change as the o character or variable changes.

correspondence, principle of. Asy totic coincidence between quan frequencies and classical frequen all analogies and asymptotic c cidences of quantum mechanics both the classical theory of cha particles of matter and with classical hydrodynamics of a tinuous density acting as a medium matter waves.

corresponding states (reduced sta When the pressures of two substa are proportional to their crit pressure: their volumes or densi are proportional to their crit volumes or densities and their t peratures to their critical temp tures.

corrosion. Mechanical wear effected running water; detrimental chang size or characteristics of mate under conditions of exposure or us

corrosion efficiency (coefficient of elec cal corrosion). Quotient of total of metal due to anodic corro divided by the calculated theoret loss of metal.

corrosive sublimate. See mercury c ride(ic).

cortin. Hormone found in medulla suprarenal gland.

corubber. See rubber, alternative.

corundum (ruby, sapphire). A mine Al_2O_3; hex. (trig. rhbdr.) col., yel., bl., br. or gray; sp.gr. 3 4.10; hardness 9; special forms precious stones, the common f is used as an abrasive, and in manufacture of alloys of alumi with copper and iron.

corybulbine. $C_{18}H_{18}N(OH)(OCH$ m.w. 355.20; need.; m.p. 238; i s.al.

corycavine. $C_{22}H_{23}NO_4$; m.w. 409 rhomb. tab. f. al.; m.p. 218-9; i i.al.

dl-corydaline. $C_{18}H_{15}N(OCH_3)_4$; m 369.22; col. pr. f. al.; m.p. dl dl-meso 158-9; i.w.; s.al.

corynine. See yohimbine.

cos ϕ. Power factor of an alterna current circuit; cosine of angle phase difference between flowing rent and e.m.f. when both sinusoidal.

cosalite. A natural sulfide of lead bismuth, $Pb_2Bi_2S_5$, found in United States.

Coshellacblak. A material consistin 64% shellac, 36% carbon bl making possible a dense-cove high-gloss product with a minim of gelling or bodying up.

cosine. Ratio of the adjacent sid an acute angle of a right triangl the hypotenuse.

cosine law. Reduction of intensity illumination of a surface, when clined to direction of incident l is proportional to cosine of angl inclination to the normal to the flux.

cosmic radiation. Radiation from in stellar space, highly penetrating producing ionization.

cosmic ray shower. See shower, cos ray.

cosmogony. Study of origin and velopment of physical universe.

cossel yellow. See lead oxychlorid

costing. Figuring cost of productio chemical products.

costra. A low-grade, Chilean soc nitrate.

gent. Ratio of the adjacent side an acute angle of a right triangle he opposite side.
ine. $C_{13}H_{18}NO_4$; m.w. 237.13; need. f.bz.; s.w.; s.al.
ine, hydrochloride (stipticin). $H_{18}NO_4 \cdot HCl$; m.w. 273.59; yel. powd.; m.p. 142-4; s.w.; s.al.
rnine, phthalate (styptol). $_{13}H_{18}NO_4 \cdot C_6H_4(COOH)_2$; m.w. 2.34; yel. cr. or powd.
n (2, 6-dihydroxy-4-methoxy-benzo-enone). $C_6H_2(OH)_2(OCH_3)CO-H_5$; m.w. 244.09; yelsh. cr. f.h.w.; p. 130-1; s.w.; s.al.
n. See gossipium.
n flock. Fibrous substance growing ound pods of cotton seed, used as iller in plastics.
n, gun. An explosive consisting ential ly of cellulose hexanitrate.
n, immunized. Cotton, treated emically, to produce special water-oofing effects and dyeing properties.
n linters. Very short fibers adhering cotton seed after ginning, used in aking cellulose esters.
n, mercerized. Cotton treated with ustic alkali.
n, mineral. See slag wool and rock ool.
on-Mouton effect (magnetic double fraction). Double refraction pro-uced in some pure liquids by a agnetic field transverse to the light eam.
on, silicate. See slag wool and rock ool.
on, "soluble." Cellulose nitrate, lso known as soluble pyroxylin and ollodion cotton, soluble in ether-lcohol mixture and used in col-odion, lacquers, bronzing liquids, opes, etc.
on-solution. Cellulose nitrate solu-ion.
onseed meal. Ground cottonseed ake; light yel.; used as an animal eed and as fertilizer.
onseed oil. See oil, cottonseed.
onseed oil. A yellow to red oil erived from cotton seeds; sp.gr. .922-0.930; m.p. 34-40; i.al.; used in anufacture of food products and ubstitutes, waterproofing and lubri-ating compositions, cosmetics, and n canning industry and medicine.
ttrell process. Process of precipitating inely divided solids from gases by assing the latter thru smooth vertical ipes containing a wire having numer-us discharge points for high potential electricity.
unnite. A mineral, $PbCl_2$; rhomb., wh., yelsh.; sp.gr. 5.84; soft; see also lead chloride.
tyledon. Primary or first leaf of a plant embryo or seed.
ulomb. Electrical unit of quantity which passes a cross-section of the conductor in 1 sec. when the rate of flow is 1 amp.
ulomb field. Field produced by a charge acting as if concentrated at a point so that the field intensity varies inversely with the square of the radial distance from that point.
ulomb law. Attraction or repulsion of two electric charges or magnetic poles is proportional to the products of the charges or pole strengths and varies inversely with the square of the distance between them.
umalic acid (2-oxo-1, 2-pyran-5-carboxylic acid). OCOCH:CH-C(COOH):CH; m.w. 140.03; pr.; s.w.; s.al.
-coumaric acid (m-hydroxycinnamic acid; m-cumaric acid). $HOC_6H_4CH:CHCOOH$; m.w. 164.06; col. pr. f.w.; m.p. 191; s.w.; s.al.
coumaric acid (o-hydroxycinnamic acid; o-cumaric acid). $HOC_6H_4CH:CHCOOH$; m.w. 164.06; need. f.w.; s.w.; s.al.
-coumaric acid (p-hydroxycinnamic acid; p-cumaric acid). $HOC_6H_4CH:CHCOOH$; m.w. 164.06; col. need. $(+1H_2O)$ f.c.w., anh. f.h.w.; m.p. 210-3; s.w.; s.al.
p-coumaric acid, α, β-dihydro-. See phloretic acid.
o-coumaric acid, lactone. See coumarin.
coumarilic acid (2-benzofurancarboxylic acid; coumarone-2-carboxylic acid). $C_8H_5O \cdot COOH$; m.w. 162.05; need. f.w.; m.p. 192-3; s.w.; s.al.
coumarin (1, 2-benzopyrone; o-coumaric acid lactone; coumarinic lactone). $C_6H_4OCOCH:CH$; m.w. 146.05; col. rhomb. f. et.; m.p. 67-8; b.p. 301.72; s.al.
coumarin, 6, 7-dihydroxy-. See esculetin.
coumarin, 7, 8-dihydroxy-. See daphnetin.
coumarin, 7-hydroxy-. See umbelliferone.
coumarin, 3-methyl- (α-methylcoumarin). $C_6H_4OCOC(CH_3):CH$; m.w. 160.06; need.; m.p. 90; s.al.
coumarin, 4-methyl- (β-methylcoumarin). $C_6H_4OCOCH:C(CH_3)$; m.w. 160.6; need.; m.p. 90; s.al.
coumarone. See benzofuran.
coumarone resin. See coumarone-indene resin.
coumarone-indene resin. Resin mixture of polymerized coumarone and polymerized indene, obtained from solvent naphtha fractions of coal tar at 160-190° C.; used in paints, varnishes, enamels and as chewing gum substitutes.
count. In textiles, the number of warp or yarns per inch.
counting tube. Ionization chamber used to count electrons or other ionizing particles.
couple. Two equal opposite forces causing rotation; two different metals having contact at one or more points.
couple, thermo-electric. Two different metals in contact which generate an e.m.f. when their junction is heated.
coupled dye. Dye formed in textile fibers where a dyestuff is used as a developer to combine with a diazotized base.
coupling. Interaction between one atomic electron and other parts of atomic electron system; an iron link uniting two railway cars.
covalency. The formation of compound by means of a sharing of electrons between the combining atoms.
covellite. See copper sulfide(ic).
Covinylblak. Carbon pigment chip consisting of Vinyloid H 66.7%, carbon black 20%, plasticizer 13.3%.
covolume. Volume thru which a gas is distributed less the volume of the molecules themselves.
cracking. The breaking down of an organic substance by means of heat; used in petroleum industry for breaking down larger molecules to those of gasolene structure.
crazing. Fine lines occurring on painted or enameled surfaces due to unequal contraction in drying or cooling.
cream of tarter. See potassium acid tartrate.
cream softener. Sulfonated tallow used in textile finishing.
cream tarter, crude. See argols.
creaming. Separation of a concentrated fraction of an emulsion from the main body of the emulsion, e.g. cream in milk.
creatine ([α-methylguanido] acetic acid; methylglycocyamine). $NH_2C(:NH)N(CH_3)CH_2COOH$; m.w. 131.09; col. monocl. pr. $(+1H_2O)$ f.w.; m.p. $-H_2O$, 100; anh. 295.
creatinine (1-methylglycocyamidine). $CH_2NC(:NH)NHCOCH_2$; m.w. 113.08; col. rhomb. pr.f.w.
creep. Deformation of a material occurring with time and due to an externally applied stress.
creep recovery. A contraction taking place when the load on creep specimens is removed.
Cremnitz white. A white pigment consisting of lead carbonate and hydrated lead oxide.
Creolin (Kresosolvin; Cresoline). A disinfectant consisting of a creosote and rosin soap solution, emulsifying in water.
creosol (2-methoxy-4-methylphenol; 4-methylguaiacol; 2-methoxy-p-cresol). $CH_3OC_6H_3(CH_3)OH$; m.w. 138.08; col. oil.; m.p. 5.5.; b.p. 221.8; s.w.; s.al.
creosote (creosote oil). A dark, yellow to greenish oil obtained from coal-tar distillation; sp.gr. 1.030-1.080; b.p. 200-300; i.al.; used as a disinfectant and wood preservative.
creosote carbonate. A clear, viscous oil derived from creosote and used in medicine.
creosote, cresylic. See cresylic creosote.
creosote oil. See creosote and oil, heavy.
creosote, pine. See pine creosote.
cresatin (m-cresol acetate). $CH_3C_6H_4OOCCH_3$; a colorless oil used in medicine.
cresidene. $C_8H_{11}NO$, a coal-tar dye.
m-cresol (m-methylphenol; m-hydroxytoluene). $CH_3C_6H_4OH$; m.w. 108.06; col. liq.; m.p. 11-2; b.p. 202.8; s.al.
o-cresol (o-methylphenol; o-hydroxytoluene; o-cresyl alcohol [incorrect]). $CH_3C_6H_4OH$; m.w. 108.06; col. cr. or liq. m.p. 30; b.p. 191.5; s.al.
p-cresol (p-methylphenol; p-hydroxytoluene). $CH_3C_6H_4OH$; m.w. 108.06; col. pr.; m.p. 36; b.p. 202.5; s.al.
m-cresol, acetate. See cresatin.
o-cresol, acetate (o-tolyl acetate; o-cresyl acetate). $CH_3COOC_6H_4CH_3$; m.w. 150.08; b.p. 208; s.w.; s.al.
cresol alcohol. See cresol.
m-cresol, 5-amino- (5-amino-3-methylphenol; 3-amino-5-hydroxytoluene). $CH_3(NH_2)C_6H_3OH$; m.w. 123.08; m.p. 79; b.p. 345.
m-cresol, 6-amino- (2-amino-5-methylphenol; 4-amino-3-hydroxytoluene). $CH_3(NH_2)C_6H_3OH$; m.w. 123.08; col. need. f. bz.; m.p. 157-9.
o-cresol, 3-amino- (3-amino-2-methylphenol; 2-amino-6-hydroxytoluene). $CH_3(NH_2)C_6H_3OH$; m.w. 123.08; need.; m.p. 129; s.w.
o-cresol, 4-amino (4-amino-2-methylphenol; 5-amino-2-hydroxytoluene). $CH_3(NH_2)C_6H_3OH$; m.w. 123.08; need. f. bz.; m.p. 172-3; s.w.; s.al.
o-cresol, 5-amino- (5-amino-2-methylphenol; 4-amino-2-hydroxytoluene). $CH_3(NH_2)C_6H_3OH$; m.w. 123.08; col. pl. or need. m.p. 159-61; s.w.; s.al.
p-cresol, 2-amino- (2-amino-4-methylphenol; 3-amino-4-hydroxytoluene). $CH_3(NH_2)C_6H_3OH$; m.w. 123.08; sc. f. et. rhomb. f. bz.; m.p. 135; s.w.; s.al.
p-cresol, 3-amino- (3-amino-4-methylphenol; 2-amino-4-hydroxytoluene). $CH_3(NH_2)C_6H_3OH$; m.w. 123.08; col. cr. f.w.; m.p. 144.5; s.w.
o-cresol, p-tert-amyl-. $C_5H_{11}C_6H_3(CH_3)OH$; m.w. 178.14; sp.gr. 0.970 ^{20}; b.p. 260-263; straw-colored.
cresol, meta-chlor-. See chlormetacresol.
o-cresol, 4, 6-dinitro- (2-methyl-4, 6-dinitrophenol). $(NO_2)_2C_6H_2(CH_3)OH$; m.w. 198.06; yel. pr. f. al.; m.p. 85.8; s.w.; s.al.
p-cresol, 2, 6-dinitro- (4-methyl-2, 6-dinitrophenol). $(NO_2)_2C_6H_2(CH_3)OH$; m.w. 198.06; lng. yel. pr.; m.p. 81; s.w.; s.al.
cresol, hexahydro-. See cyclohexanol, methyl-.
Cresoline. See Creolin.
p-cresol, 2-methoxy-. See creosol.
m-cresol, 4-nitro- (3-methyl-4-nitrophenol). $NO_2(CH_3)C_6H_3OH$; m.w. 153.06; need. f.w.; m.p. 129; s.w.; s.al.
m-cresol, 5-nitro- (3-methyl-5-nitrophenol). $NO_2(CH_3)C_6H_3OH$; m.w. 153.06; lt. yel. cr.; m.p. 90-1; s.w.; s.al.
m-cresol, 6-nitro- (3-methyl-6-nitrophenol). $NO_2(CH_3)C_6H_3OH$; m.w. 153.06; yel. monocl. need. f. et.; m.p. 56; s.w.; s.al.
o-cresol, 3-nitro-. $NO_2(CH_3)C_6H_3OH$; m.w. 153.06; lt. yel. cr. f.w.; m.p. 142-3; s.w.; s.al.
o-cresol, 4-nitro- (2-methyl-4-nitrophenol). $NO_2(CH_3)C_6H_3OH$; m.w. 153.06; need. f.w.; m.p. 82-5; s.w.; s.al.
o-cresol, 5-nitro- (2-methyl-5-nitrophenol). $NO_2(CH_3)C_6H_3OH$; m.w. 153.06; yel. need. f. lgr.; m.p. 118; s.w.; s.al.
o-cresol, 6-nitro- (2-methyl-6-nitrophenol). $NO_2(CH_3)C_6H_3OH$; m.w. 153.06; yel. pr.; m.p. 69.5; i.w.; s.al.
p-cresol, 2-nitro- (4-methyl-2-nitrophenol). $NO_2(CH_3)C_6H_3OH$; m.w. 153.06; yel. need. f.dil.al.; m.p. 36.5; b.p. 125 ^{25}; s.w.; s.al.
p-cresol, 3-nitro- (4-methyl-3-nitrophenol). $NO_2(CH_3)C_6H_3OH$; m.w. 153.06; yel. pr. f. et.; m.p. 77; s.w.; s.al.
o-cresol, 3, 4, 5, 6-tetrabromo-. $CH_3C_6Br_4OH$; m.w. 423.70; yel. need. f.chl.; m.p. 206-7; i.w.
m-cresol, thio- (3-toluenethiol; m-tolyl mercaptan). $CH_3C_6H_4SH$; m.w. 124.12; liq.; m.p. <-20; b.p. 195-200; i.w.; s.al.
o-cresol, thio- (2-toluenethiol; o-tolyl mercaptan). $CH_3C_6H_4SH$; m.w. 124.12; leaf.; m.p. 15; b.p. 194.3; i.w.; s.al.
p-cresol, thio- (4-toluenethiol; p-tolyl mercaptan). $CH_3C_6H_4SH$; m.w. 124.12; leaf. f. et.; m.p. 42-3; b.p. 195; i.w.; s.al.
m-cresol, 2, 4, 6-trinitro-. $(NO_2)_3C_6H(CH_3)OH$; m.w. 243.06; yel. need. f.w.; m.p. 106; s.al.
Cresophan. Alkyl meta-cresol; m.p. 23.1; antiseptic and germicide.
cresorcinol (4-methylresorcinol; cresorcin; 2, 4-dihydrotoluene). $CH_3C_6H_3(OH)_2$; m.w. 124.06; col. cr. f. bz. + pet. et.; m.p. 104-5; b.p. 267-70; s.w.; s.al.
2, 3-cresotic acid (2-hydroxy-3-methylbenzoic acid; 2-hydroxy-m-toluic acid; o-homosalicylic acid; o-cresotic acid; β-cresotic , acid). $CH_3C_6H_3(OH)COOH$; m.w. 152.06; lng. need. f.w.; m.p. 163-4; s.al.
2, 4-cresotic acid (2-hydroxy-4-methylbenzoic acid; 2-hydroxy-p-toluic acid; α-m-homosalicylic acid; m-cresotic acid; γ-cresotic acid). $CH_3C_6H_3(OH)COOH$; m.w. 152.06; sm. need. f.w.; m.p. 178; s.al.
2, 5-cresotic acid (2-hydroxy-5-methylbenzoic acid; 6-hydroxy-m-toluic acid; p-homosalicylic acid; p-cresotic acid; α-cresotic acid). $CH_3C_6H_3(OH)COOH$; m.w. 152.06; lng. need. f.w.; m.p. 152.5; s.w.; s.al.
2, 6-cresotic acid (2-hydroxy-6-methylbenzoic acid; 6-hydroxy-o-toluic acid; β-m-homosalicylic acid). $CH_3C_6H_3(OH)COOH$; m.w. 152.06; need. f.w.; m.p. 168; s.al.
3, 2-cresotic acid (3-hydroxy-2-methylbenzoic acid; 3-hydroxy-o-toluic acid). $CH_3C_6H_3(OH)COOH$; m.w. 152.06; glit. need. f.w.; m.p. 145-6; s.w.; s.al.
3, 4-cresotic acid (3-hydroxy-4-methylbenzoic acid; 3-hydroxy-p-toluic acid). $CH_3C_6H_3(OH)COOH$; m.w. 152.06; lng. need.; m.p. 207; s.w.; s.al.
3, 5-cresotic acid (3-hydroxy-5-methylbenzoic acid; 5-hydroxy-m-toluic acid). $CH_3C_6H_3(OH)COOH$; m.w. 152.06; tab. f.w.; m.p. 208; s.al.
3, 6-cresotic acid (3-hydroxy-6-methylbenzoic acid; 5-hydroxy-o-toluic acid). $CH_3C_6H_3(OH)COOH$; m.w. 152.06; need. f.w.; m.p. $-H_2O$, 100; 177-8; s.w.; s.al.
4, 2-cresotic acid (4-hydroxy-2-methylbenzoic acid; 4-hydroxy-o-toluic acid). $CH_3C_6H_3(OH)COOH$; m.w. 152.06; monocl. f.al. or w.; m.p. 177.8; s.w.; s.al.
4, 3-cresotic acid (4-hydroxy-3-methylbenzoic acid; 4-hydroxy-m-toluic acid). $CH_3C_6H_3(OH)COOH$; m.w. 152.06; monocl. need. f.w.; m.p. 172; s.w.; s.al.

cresotinic acid. See cresotic acid.

cresylic acid. Mixture of o-, m-, and p-cresols (q.v.) (cresyl, paracresylol).; straw to br. red liq.; sp.gr. 1.044.; b.p. 185-230; m.p. 80.; s.w.; used in mfr. of disinfectants, sheep dips, synthetic resins, in medicine.

cresylic acid, crude. A crude mixture of monohydric phenols, essentially cresols and their higher homologs, of lower phenol content than crude carbolic acid.

cresylic acid, refined. A refined mixture of monohydric phenols, consisting essentially of cresols and/or xylenols with or without a percentage of phenol.

cresylic creosote. Creosote containing substantial amounts of phenols and usually conforming to a specification, especially in regard to its phenol content.

cresyl phosphate. See tolyl phosphate.

crimp. The difference in distance between two points on a yarn as it lies in a fabric and the same two points when the yarn has been removed from the fabric and straightened, expressed as a percentage of the distance between the two points as the yarn lies in the fabric.

cristobalite. A mineral, SiO_2; pseudo-isometric?; sp.gr. 2.27-2.34; hardness 2.5-3.0; see also silicon oxide, di-.

critical angle. Angle of incidence of light for which angle of refraction is 90°.

critical coefficient. Ratio of critical temperature to critical pressure.

critical conditions. The conditions of temperature, pressure and volume of a substance in its gas-liquid state at the critical point.

critical density. Density at the critical point (q.v.).

critical frequency (threshold frequency). Frequency of intermittent illumination which just prevents flickering.

critical point. Particular pressure and temperature at which liquid or gaseous phases reverse at the slightest change in conditions.

critical potential. Potential of a compound thru which an electron must pass in order to have sufficient energy for it to suffer an inelastic collision with a molecule of the substance; of the order of 1 to 10 volts.

critical pressure. The pressure required to liquefy a gas at its critical temperature (q.v.). The pressure under which a substance may exist as a gas in equilibrium with the liquid at the critical temp.

critical range. Range of temperature between two transitions in a metal or alloy.

critical solution temperature (consolute temperature). Temperature below which two mutually soluble liquids become partially soluble in each other.

critical speed. Speed of revolution of a shaft or other mechanical part equal to its natural period of vibration.

critical state. Gas-liquid state of a substance at its critical point.

critical temperature. The temperature above which it is impossible to liquefy a gas; the highest temperature at which a liquid can retain a definite bounding surface, separating it from its own vapor.

critical velocity. Velocity at which the flow changes from viscous to turbulent.

critical volume. The volume occupied by a certain mass, one gram, of gas at its critical temperature and pressure.

critical wave length. Wave length at the critical or threshold frequency in a quantum radiation process.

croceic acid (2-naphthol-8-sulfonic acid; β-naphthol-α-monosulfonic acid; Baeyer's acid). $HOC_{10}H_5SO_3H$; m.w. 224.12.

crocic acid. See croconic acid.

crocidolite (blue asbestos, cape blue). A variety of asbestos, $(OH)_2Na_2Fe_5Si_8O_{22}$; lavender-blue in color, suited for spinning and weaving.

crocking. The staining of a white cloth, usually damp, by rubbing lightly over a colored surface.

crocoisite. See lead chromate.

crocoite (crocoisite). A mineral, $PbCrO_4$; monocl., red.; sp.gr. 5.9-6.1, hardness 2.5-3; see also lead chromate.

croconic acid (crocic acid). $C_5O_5(OH)_2 \cdot 3H_2O$; m.w. 196.06; yel. leaf. m.p. $-3H_2O$, 100, anh. 180; s.w.; s.al.

crocus. The dried and powdered flowers of the saffron plant used as a coloring and flavoring agent.

Crooke's radiometer. See radiometer, Crooke's.

crookesite. A mineral containing copper, selenium, thallium and silver.

cross dyeing. Dyeing mixed textiles in two or more shades.

cross-hair. Fine filament or spider hair used in lenses of measuring instruments such as transits, levels, etc.

cross hatching. Oblique lines on drawing indicating different materials.

Cross process. The "cracking" of petroleum in the liquid state.

crotaline. The venom of a rattlesnake, used in medicine.

croton oil. See oil, croton.

crotonaldehyde (2-butenal; crotonic aldehyde; β-methylacrolein; propylene aldehyde). $CH_3CH{:}CHCHO$; m.w. 70.05; col. inflam. liq.; m.p. −69; b.p. 104-5; s.w.; s.al.

crotonic acid (α or solid). (trans[?]-2-butenoic acid; trans[?]-β-methylacrylic acid). $CH_3CH{:}CHCOOH$; m.w. 86.05; col. monocl. need. f.w. or lgr.; m.p. 72; b.p. 189.

crotonic acid, β-bromo- (3-bromo-trans-2-butenoic acid). $CH_3CBr{:}CHCOOH$; m.w. 164.96; leaf.; m.p. 97; s.w.; s.al.

crotonic acid, butyl ester. $CH_3 \cdot CH{:}CH{:}COOC_4H_9$; m.w. 142.109; sp.gr. .902; b.p. 180-5; used in mfr. of cellulose ester coatings; lacquer solvent and softener.

crotonic acid, α-chloro- (2-chloro-2-butenoic acid [one form]). $CH_3CH{:}CClCOOH$; m.w. 120.50; lng. need.; m.p. 99; s.al.

crotonic acid, α-ethyl- (2-ethyl-trans[?]-2-butenoic acid; 2-pentene-3-carboxylic acid). $CH_3CH{:}C(C_2H_5)COOH$; m.w. 114.08; col. monocl. pr.; m.p. 45; b.p. 209; s.w.; s.al.

crotonic acid, ethyl ester. $CH_3 \cdot CH{=}CH \cdot COOC_2H_5$; m.w. 114.08; colorl. liq.; sp.gr. .919; b.p. 36; i.w.; s.al.; medium boiling lacquer solvent and softener.

crotonic acid, β-hydroxy- (3-hydroxy-2-butenoic acid; desmotropic with acetoacetic acid). $CH_3COH{:}CHCOOH$; m.w. 102.05; liq.; s.w.

crotonic acid, methyl ester (methyl α-crotonate). $C_3H_5COOCH_3$; m.w. 100.06; col. liq.; b.p. 120.7; i.w.; s.al.

crotonic anhydride (2-butenoic anhydride). $(CH_3CH{:}CHCO)_2O$; m.w. 154.08; col. liq.; b.p. 246-8; d in w.; d in al.

crotonyl acetate. See 2-buten-1-ol, acetate.

crotonyl alcohol. See 2-buten-1-ol.

crotonylene. See 2-butyne.

crottle. A coloring matter obtained from certain lichens.

crotyl acetate. See 2-buten-1-ol, acetate.

crotyl alcohol. See 2-buten-1-ol.

crown glass. See glass, crown.

crucible. A vessel used for melting or heating solid substances to high temperatures.

crude oil. See petroleum.

crutcher. Mixing device used in making soap.

cryogenic. Referring to low temperatures or to apparatus for producing same.

cryohydrate. The solid which separates when a saturated solution freezes.

cryohydric point. Lowest temperature that can be attained with mixtures of two components in the presence of vapor.

cryolite (ice stone). A mineral, Na_3AlF_6 or $3NaF \cdot AlF_3$; monocl., col. to wh.; rar. redsh. brush or blk.; sp.gr. 2.95-3.00; hardness 2.5; used as the molten conducting medium in the electrolytic production of aluminum.

cryolithionite. A mineral, $3NaF \cdot 3LiF_3 \cdot 2AlF_3$; sp.gr. 2.777-2.778; hardness 2.5-3.0.

cryoscopy. A method of determining the molecular weight of a substance by measuring the depression in the freezing-point of a solvent in which the substance is dissolved.

cryostat. Low temperature thermostat.

cryptococcus. A group of pathogenic yeast-like fungi.

cryptogamia. Plants which do not form flowers with pistils, stamens or seeds and propagate by spores or cells.

cryptohalite. See ammonium fluosilicate.

cryptometer. Device for measuring hiding power of coatings in absolute units.

Cryptone (Duolith, Titanolith, Tidolith). One of a series of white pigments containing varying amounts of titanium dioxide, lithopone, etc.; a lithopone with a high percentage of zinc sulfide.

cryptopine. $C_{21}H_{23}NO_5$; m.w. 369.19; pr.f.al.; opt. in.; m.p. 220-1; i.w.; s.al.

crysolite. See olivine.

crystal. Solid in which the molecules are arranged in a regular pattern in space; bodies of regular shape bounded by plane surfaces.

crystal grating. Crystal so mounted to act as a diffraction grating.

crystal, ionic. See ionic crystal.

crystal lattice. In crystals the structure repeats itself in each of three dimensions. Corresponding points in these repetitions form a regular pattern called the crystal lattice.

crystal, liquid. See liquid crystal.

crystal, mixed. See mixed crystal.

crystal, mosaic. See mosaic crystal.

crystal, negative. See negative crystal.

crystal, positive. See positive crystal.

crystal systems (crystallographic systems). The classification of crystals based on the degree of symmetry that is shown by crystals, the one with the highest degree of symmetry being the cubic system; there are seven systems and 32 types.

crystal violet (base) (hexamethylpararosaniline). $[(CH_3)_2NC_6H_4]_3COH$; m.w. 389.27; vlt. cr. f. bs.; m.p. 195; i.w.; s.al.

Crystalite. Synthetic acrylate resin.

crystallization. The formation of solid crystals which are chemical substances of definite geometric form.

crystallogram. Photograph of x-ray diffraction pattern of a crystal.

crystallographic axes. Principal axes of symmetry which serve to characterise the common properties of all the crystals belonging to a given system.

crystallographic systems. See crystal systems.

crystalloid. Substance which forms crystals which pass thru permeable membranes from its solutions.

crystalloluminescence. Light emitted during precipitation of crystals from solutions.

crystals, chamber. See nitrosyl sulfuric acid.

crystals, snowflake. See snowflake crystals.

crystals, twinned. See twinning.

Crystolon. The trade name for silicon carbide (q.v.).

Cuba wood. See fustic extract.

cubeb oil. See oil, cubeb.

cubebin. $C_{20}H_{20}O_6$; m.w. 356.16; wh. need. f.al. or bs.; m.p. 131-2; s.w.

cucurbit. Vessel with round or oval body and long exit tube used in distilling and digesting.

cudbear. See archil.

cullet. Broken and scrap glass added to glass-making batches.

culm. Low grade small steam coal or anthracite.

culture. Growth or crop of organisms in a nutrient medium.

culture, broth. Bouillon or beef broth medium for growing bacteria.

culture medium. Material in which bacteria find nourishment and reproduce.

culture, plate. Growing medium for bacteria using glass plates filled with beef-broth solidified with gelatin or agar.

culture, pure. See pure culture.

culver's root. See leptandra.

cumaldehyde (p-isopropylbenzaldehyde; p-cuminic aldehyde). $C_3H_7C_6H_4CHO$; m.w. 148.09; col. liq.; b.p. 2[illegible] i.w.; s.al.

Cumar. Synthetic coumarone-indene resin.

cumaric acid. See coumaric acid.

cumarone resin (Cumar; paracoumarone-benzofurane resin). Lemon-yel. to brown. red amorphous solid; sp. 1.05-1.10; m.p. 45-200; decompo at 250; i.w., i.al; sol. org. solven used in chewing gum, paints, varnish enamels, molded goods.

cumene (isopropylbenzene; 2-phen propane; cumol). $C_6H_5CH(CH_3)$ m.w. 120.09; col. liq.; m.p. −96 b.p. 152-3; i.w.; s.al.

cumene, hexahydro-. See cyclohexa isopropyl-.

cumene, α-nitro- (2-nitro-2-phenylpropane; [α-nitroisopropyl] benzen $C_6H_5C(NO_2)(CH_3)_2$; m.w. 165.09; li m.p. −35.

o-cumenol. See phenol, o-isopropy

cumic acid (p-isopropylbenzoic acid; cuminic acid). $(CH_3)_2CHC_6H_4COO$ m.w. 164.09; col. tricl. f.al.; m.p. 116 s.al.

cumic alcohol (p-isopropylbenzyl alcoh p-cuminic alcohol). $C_3H_7C_6H$ CH_2OH; m.w. 150.11; yel. liq.; b 248.4; s.w.; s.al.

α-cumidic acid (4, 6-dimethylisophthal 4, 6-dimethyl-1, 3-benzenedicarbo ylic acid). $(CH_3)_2C_6H_2(COOH)_2$; w. 194.08; lng. pr. f. bz. + al., need. f.w.; s.w.; s.al.

cumidine (p-isopropylaniline). $(CH_3$ $CHC_6H_4NH_2$; m.w. 135.11; col. li m.p. −63; b.p. 225; i.w.; s.al.

p-cuminic acid. See cumic acid.

p-cuminic alcohol. See cumic alcoh

p-cuminic aldehyde. See cumaldehyd

cumin oil. See oil, cumin.

cumol. See cumene.

cumylic acid. See durylic acid.

cup grease. An animal fat that saponified with slaked lime a sprayed with a mineral oil.

cupel. Porous crucible or other ves used in cupellation.

cupellation. Process of purifying nob metals contaminated with lead heating on a cupel.

Cupferron. $C_6H_5NNOONH_4$; reage used in analytical chemistry.

cupola. A shaft furnace into whi metals and fuel are supplied in alte nate layers or charges.

cuprammonium rayon. See rayo cuprammonium.

cupreine (hydroxycinchonine). $C_{19}H_2$ $N_2(OH)_2$; m.w. 310.19; concentr pr.f.et.; m.p. anh. 198; i.w.; s.al.

cupric. Designation for copper sa where the copper is divalent, e. cupric chloride, $CuCl_2$.

cuprite (red copper ore). A miner Cu_2O; cub., red.; rar. br.-blk.; sp.g 5.85-6.15; hardness 3.5-4.0.

cupro. Prefix pertaining to copper.

Cuprocide. Red copper oxide.

cuproscheelite. A minera $CuCa_2(WO_4)_3$.

cuprous. Designation for copper sa where the copper is monovalent, e. cuprous chloride, CuCl.

curara. A South American poison co taining curarine as its active princip

curarine. $C_{19}H_{23}N_2O \cdot OH$; m.w. 314.2 red.-br. leaf.; m.p. 161; i.w.; s.al.

curbay binder (evaporated molass residue). A by-product of man

ture of industrial alcohol; dark ored syrupy liquid; sp.gr. 1.330-55; a core binding material in ndry practice; used in road con-uction.

uma (turmeric). A natural dye-iff used to color foods and textiles d as an indicator in analytical emistry.

umin (1, 7-bis[4-hydroxy-3-methoyx-enyl]-1, 6-heptadiene-3, 5-dione). $(CH_3O)(OH)C_6H_3CH{:}CHCO)_2CH_2$; .w. 368.16; or.-yel. need. or powd.; .p. 183; i.w.; s.al.

. Time necessary for a plastic mpound to remain in a mold for mplete reaction to become infusible nd chemically inert; see vulcaniza-on.

e, optimum. That cure which pro-uces a rubber of highest tensile rength.

e. Quantity of radium emanation equilibrium with 1 gram of radium.

ie constant. Product of absolute emperature and atomic or molar nagnetic susceptibility of a para-nagnetic substance following the Curie law.

rie law. The magnetic susceptibility f a paramagnetic substance, referred o unit mass varies inversely as the bsolute temperature.

rie point (magnetic transformation emperature). Temperature at which ferromagnetic substance becomes aramagnetic.

rie-Weiss law. Magnetic susceptis bility of a paramagnetic substance i-nversely proportional to the increment f its temperature above a certain ixed temperature characteristic of the substance.

rine. $C_{18}H_{19}NO_3$; m.w. 297.16; col. cr.; m.p. 212.

ring. The change of a binder from soluble-fusible condition to an in-soluble-fusible form by chemical action; heat-setting of a resinoid, action analagous to vulcanization of rubber.

ring, vapor. Process of vulcanizing rubber coverings by sulfur chloride fumes.

rite. A radioactive, natural, hydrated uranate of lead and uranium, $2PbO \cdot 5UO_3 \cdot 4H_2O$.

rrent (electric). The rate of transfer of electricity.

rrent concentration. Current strength divided by the volume of the elec-trolyte thru which it passes.

rrent, dark. See dark current.

rrent density. Electrical current per unit cross section of conductor.

rrent, field. See field emission.

rrent, ionization. See ionization cur-rent.

rrent, limiting. See limiting current.

rrent refraction. Directional change of current at interface of two con-ductors of different conductivity.

rrent, residual. See residual current.

rrent stray. Current that has leaked from an electrical circuit into the earth.

rrent, three phase. See three phase current.

rrying. Stuffing leather with an oil-fat mixture.

rvilinear. Bounded by or consisting of curves.

uscohygrine (anh.) (cuskhygrine). $C_{12}H_{24}N_2O$; m.w. 224.20; oil; b.p. 215 [20]; s.w.

uscohygrine (hydrate). $C_{13}H_{24}N_2O \cdot 3\frac{1}{2}H_2O$; m.w. 287.26; need.; m.p. 40-1.

uskhygrine. See cuscohygrine.

usparia bark. See angostura bark.

usparine (2-homopiperonyl-4-methoxy-quinoline). $C_{18}H_{17}NO_3$; m.w. 307.14; lng. col. need.; m.p. 91-2; s.al.

ut. Fraction obtained in distillation; to dissolve; a unit of yarn number, the number of 100-yd. lengths per pound avoirdupois of asbestos yarn, or the number of 300-yd. lengths per pound avoirdupois of woolen yarn.

cut back. Having been fluxed with solvents.

cut-out. Safety device for "breaking" the electrical circuit under certain conditions; also see fuse.

cutch. A natural dyestuff used in textile dyeing, tanning and in pharmaceuti-cals.

cutocellulose. Compound cellulose found in plants mixed with tissues and oily and waxy substances, e.g. cork.

cutting oil. See oil, cutting and oil, soluble.

cuttlefish bone. See sepia.

cyamelide (s-trioxanetriimine; insoluble cyanic acid). $(HNCO)_3$; m.w. 129.05; wh. amor.; i.al.

cyanamide (carbamonitrile). $CN \cdot NH_2$; m.w. 42.03; col. need.; m.p. 44; s.w.; s.al.

cyanamide, benzyl-. $C_6H_5CH_2NHCN$; m.w. 132.08; pl.f.al.; m.p. 43; i.w.; s.al.

cyanamide, diethyl- (N-cyanodiethyl-amine). $CNN(C_2H_5)_2$; m.w. 98.09; liq.; i.w.; s.al.

cyanamide, phenyl-. See cyananilide.

cyananilide (carbanilonitrile; phenyl-cyanamide; N-cyanoaniline). C_6H_5-NHCN; m.w. 118.06; need. f. et.; m.p. 47; s.w.; s.al.

Cyanegg. Egg shaped pellets of sodium cyanide.

cyanic acid. HOCN; m.w. 43.02; col. gas; sp.gr. liq. 1.140[-] dec. s.w.

cyanic acid, ethyl ester. C_2H_5OCN; m.w. 71.05; liq.; i.w.; s.al.

cyanic acid, insoluble. See cyamelide.

cyanic acid, thio-. See thiocyanic acid.

cyanidation. A method of converting gold and silver from their ores into a soluble form by treatment with cyanides.

cyanide. The salt of hydrocyanic acid, e.g. potassium cyanide, KCN.

cyanidine. See s-triazine.

cyanidine, trihydroxy-. See cyanuric acid.

cyaniding. Method of surface hardening of iron alloys by heating with cyanides and quenching.

cyanite (disthene). A mineral, Al_2SiO_5 or $Al_2O_3 \cdot SiO_2$; tricl., bl., gray, wh., grn. or blk.; sp.gr. 3.559-3.675; hard-ness 4-7.

Cyanogas. A trade name for a brand of calcium cyanide used as an exterminator and fumigant.

cyanogen (gas) (ethanedinitrile; oxalo-nitrile; prussite). N:CC:N; m.w. 52.02; col. pois. gas; m.p. −34.4; b.p. −20.5; s.w.; s.al.

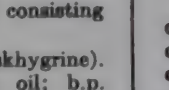
cyanogen bromide (bromine cyanide). CNBr; m.w. 105.92; col. need.; m.p. 52; b.p. 61.6; s.w.; s.al.

cyanogen chloride (chlorine cyanide). CNCl; m.w. 61.47; col. liq. or pois. gas; m.p. −6; b.p. 13.8; s.w.; s.al.

cyanogen chloride, trimer. See cyanuric chloride.

cyanogen iodide (iodine cyanide). CNI; m.w. 152.93; col. need. f. et. or al.; m.p. 146.5; seal. tube; s.w.; s.al.

cyanogen sulfide. See thiocyanic acid, cyanogen ester.

cyanohydrin. Addition product of hydrocyanic acid and an aldehyde or ketone, e.g. 

cyanotriamide. See melamine.

cyanotype. Blue printing process.

cyanuramide. See ammelide.

cyanuric acid (n) (s-triazinetriol; tri-hydroxycyanidine; tricyanic acid). N:C(OH)N:C(OH)N:C(OH); m.w. 129.05; col. monocl. $(+2H_2O)$ f.w.; efflor.; m.p. >360.

cyanuric chloride (trichloro-s-triazine; trichlorocyanidine; tricyanogen chlo-ride). $C_3Cl_3N_3$; m.w. 184.40; monocl. f.et.; m.p. 146; b.p. 190; s.w.; s.al.

cyanuric acid, tribenzyl ester (benzyl cyanurate). $(C_6H_5CH_2OC:N)_3$; m.w. 399.19; need. f.al.; m.p. 157; b.p. >320; s.al.

cyanuric acid, trithio-. See thiocyanuric acid.

cyanurodiamide. See ammeline.

cyboma. See cybotatic complex.

cybotatic complex (cyboma). Molecule in a liquid that continually undergoes association into complexes or groups of transitory character.

cybotaxis. Spacial arrangement of mole-cules in a liquid with crystal-like orientation but lacking stability or permanence at any point.

cycads. Most primitive living group of seed bearing plants.

cyclane. See cycloparaffine.

cycle (cyclical process). Process in which the system is back at original point at the end of a complete opera-tion, e.g. nitrogen cycle in plant life.

cycle, Rankine. See Rankine cycle.

cyclic. See chain, closed.

cyclic molecule. A molecule without terminal carbons. See chain, closed.

cyclo-. Pertaining to a ring structure or closed chain formation among the atoms, e.g. cyclohexane-fully hydro-genated benzene where six carbons are connected in a closed chain.

cycloalkane. Saturated monocyclic hydrocarbon, e.g. cyclopropane.

cyclobutane (tetramethylene). CH_2-$CH_2CH_2CH_2$; m.w. 56.06; liq. or gas; m.p. −50; b.p. 13; i.w.; s.al.

cyclobutane, benzoyl-. See ketone, cyclobutyl phenyl.

1, 2-cyclobutanedicarboxylic acid (ethyl-enesuccinic acid). $C_4H_6(COOH)_2$; m.w. 144.06.
cis: pl.f.w.; m.p. 138; s.w.; s.al.
trans: (dl) need. f. bz.; m.p. 131; s.w.; (d) m.p. 105; (l) m.p. 105.

1, 3-cyclobutane dicarboxylic acid. $C_4H_6(COOH)_2$; m.w. 144.06.
cis: pr.f.w.; m.p. 138-9; b.p. 252; s.w.; s.al.
trans: pr.; m.p. 171; s.al.

cyclobutane, methyl-. $CH_3CHCH_2CH_2$-CH_2; m.w. 70.08; col. liq.; b.p. 42; i.w.; s.al.

cyclobutene (cyclobutylene). $CH{:}CH$-CH_2CH_2; m.w. 54.05; gas; b.p. 2.

cyclodiene (cyclodiolefine). Cyclic hydrocarbon of general formula, C_nC_{2n-4}, containing two double bonds between carbon atoms of the ring.

cyclodiolefine. See cyclodiene.

9-cycloheptadecen-1-one. See civetone.

cycloheptane (heptamethylene; sub-erane). $CH_2(CH_2)_5CH_2$; m.w. 98.11; oil; m.p. −12; b.p. 118.1; i.w.; s.al.

cycloheptanol (suberyl alcohol; suberol; hydroxyheptamethylene). CH_2-$(CH_2)_5CHOH$; m.w. 114.11; b.p. 185.2; s.al.

cycloheptanone (suberone; ketohepta-methylene). $CO(CH_2)_5CH_2$; m.w. 112.09; oil; b.p. 179.5; s.w.; s.al.

cycloheptene (suberene; suberylene). $CH{:}CH(CH_2)_4CH_2$; m.w. 96.09; oil.; b.p. 115; i.w.; s.al.

1, 3-cyclohexadiene (1, 2-dihydro-benzene; $\Delta^{1,3}$-cyclohexadiene). $CH{:}$-$CHCH{:}CHCH_2CH_2$; m.w. 80.06; col. liq.; m.p. −98; b.p. 80.5; i.w.; s.al.

1, 4-cyclohexadiene (1, 4-dihydro-benzene; $\Delta^{1,4}$-cyclohexadiene). $CH{:}$-$CHCH_2CH{:}CHCH_2$; m.w. 80.06; col. liq.; b.p. 86-7; i.w.; s.al.

cyclohexadiene-1, 2-dicarboxylic acid. See phthalic acid, dihydro-.

1, 3-cyclohexadiene-1, 4-dicarboxylic acid (2, 3-dihydroterephthalic acid). $C_6H_6(COOH)_2$; m.w. 168.06; flocks.

1, 4-cyclohexadienedione. See quinone.

1, 3-cyclohexadiene, 5-isopropyl-2-methyl-. See α-phellandrene.

cyclohexane (hexahydrobenzene; hexa-methylene). C_6H_{12}; m.w. 84.09; col. liq.; m.p. 6.5; b.p. 81.4; i.w.; s.al.

cyclohexane, amino-. See cyclohexyl-amine.

cyclohexane, bromo- (cyclohexyl bro-mide). $C_6H_{11}Br$; m.w. 163.00; col. liq.; b.p. 163-5; i.w.; s.al.

cyclohexanecarboxylic acid (hexahydro-benzoic acid). $C_6H_{11}COOH$; m.w. 128.09; col. monocl. pr.; m.p. 31; b.p. 233; s.al., s.w.; used in mfr. of paint and varnish driers, dry cleaning soaps, lubricating oils.

cyclohexanecarboxylic acid, 2-hydroxy-(hexahydrosalicylic acid). HOC_6H_{10}-$COOH$; m.w. 144.09; cr. f.w.; m.p. 111; s.w.; s.al.

cyclohexanecarboxylic acid, 1, 2, 4, 5-tetrahydroxy-. See quinic acid.

cyclohexane, chloro- (cyclohexyl chlo-ride). $C_6H_{11}Cl$; m.w. 118.54; col. liq.; m.p. −43.9; b.p. 142.5; i.w.; s.al.

1, 2-cyclohexanedicarboxylic acid (hexa-hydrophthalic acid). $C_6H_{10}(COOH)_2$; m.w. 172.09; cis: tricl. pr.f.w., trans: monocl. leaf. f.w.; m.p. cis: 192, trans: 221; s.al.

1, 4-cyclohexanedicarboxylic acid (hexa-hydroterephthalic acid). C_6H_{10}-$(COOH)_2$; m.w. 172.09.
cis: leaf. f.w.; m.p. 161-2; s.w.; s.al.
trans: pr.f.w.; s.al.

cyclohexane, 1, 3-dimethyl- (hexahydro-m-xylene). $C_6H_{10}(CH_3)_2$; m.w. 112.12; col. liq.; m.p. −85; b.p. (cis) 121; (trans) 119 [756]; i.w.; s.al.

cyclohexane, 1, 4-dimethyl- (hexahydro-p-xylene). $C_6H_{10}(CH_3)_2$; m.w. 112.12; col. liq.; m.p. −86; b.p. 120.5.

1, 3-cyclohexanedione (3-hydroxy-2-cyclohexen-1-one. [tautomeric form]; dihydroresorcinol; hydroresorcinol). $COCH_2COCH_2CH_2CH_2$ or $COCH{:}$-$COHCH_2CH_2CH_2$; m.w. 112.06; pr. f. bz. or ethyl acetate; m.p. 105-6; s.w.; s.al.

1, 4-cyclohexanedione (tetrahydro-quinone; p-quinone tetrahydride). $CO(CH_2)_2COCH_2CH_2$; m.w. 112.06; monocl. f.w.; m.p. 78; s.w.; s.al.

cyclohexane, 1, 2, 3, 4, 5, 6-hexabromo-. (α or trans) (benzene transhexabro-mide). $C_6H_6Br_6$; col. monocl. pr.; m.p. 212; i.w.; s.al.

cyclohexane, 1, 2, 3, 4, 5, 6-hexabromo-(β or cis) (benzene β-hexabromide). $C_6H_6Br_6$; m.w. 557.54; cub. cr. f. bz.; i.al.

1, 2, 3, 4, 5, 6-cyclohexanehexacarboxylic acid (hexahydromellitic acid). C_6H_6-$(COOH)_6$; m.w. 348.09; cr.; s.w.; s.al.

cyclohexane, 1, 2, 3, 4, 5, 6-hexachloro-(α or trans) (benzene transhexachlo-ride). $C_6H_6Cl_6$; m.w. 290.79; col. monocl. pr.; m.p. 157; i.w.; s.al.

cyclohexane, 1, 2, 3, 4, 5, 6-hexachloro-(β or cis) (benzene cis-hexachloride). $C_6H_6Cl_6$; m.w. 290.79; col. cr.; m.p. 310; i.w.; s.al.

cyclohexane, 1, 2, 3, 4, 5, 6-hexachloro-(γ) (benzene γ-hexachloride). $C_6H_6Cl_6$; m.w. 290.79; need. f.al.; m.p. 112-3; i.w.

cyclohexane, 1, 2, 3, 4, 5, 6-hexachloro-(δ) (benzene δ-hexachloride). $C_6H_6Cl_6$; m.w. 290.79; pl.; m.p. 129-32.

1, 2, 3, 4, 5, 6-cyclohexanehexol. See i-inositol.

cyclohexanehexone, hydrate (triquinoyl hydrate). $C_6O_6 \cdot 8H_2O$; m.w. 312.12; micr. need. f. dil. HNO_3; m.p. 95; s.w.; i.al.

cyclohexane, isopropyl- (hexahydro-cumene; normenthane). $C_6H_{11}C_3H_7$; m.w. 126.14; col. liq.; b.p. 150; i.w.; s.al.

cyclohexane, 4-isopropyl-1-methyl-. See p-menthane.

cyclohexane, methyl- (hexahydro-toluene; cyclohexylmethane). CH_3-C_6H_{11}; m.w. 98.11; col. liq.; m.p. −126.4; b.p. 100.3; i.w.; s.al.

cyclohexanepentol. See d-quercitol.

cyclohexane, phenyl- (cyclohexylbenzene; 1, 2, 3, 4, 5, 6-hexahydrobiphenyl). $C_6H_5C_6H_{11}$; m.w. 160.12; oil; m.p. 7; b.p. 237.5; i.w.; s.al.

cyclohexane, 1, 3, 5-trimethyl- (hexahydromesitylene). $C_6H_9(CH_3)_3$; m.w. 126; 14; col. liq.; b.p. 135-8.

1, 3, 5-cyclohexanetrione, trioxime. (1, 3, 5-trihydroxaminobenzene, phloroglucinol trioxime). $C_6H_3(NOH)_3$ or $C_6H_3(NHOH)_3$; m.w. 171.09; cr. powd.; s.w.; s.al.

cyclohexanol (hexahydrophenol; Hexalin). $C_6H_{11}OH$; m.w. 100.09; col. need., hyg.; m.p. 24; b.p. 161.5; s.al.

cyclohexanol acetate (cyclohexyl acetate; Hexalin acetate). $CH_3COOC_6H_{11}$; m.w. 142.11; sp.gr. 0.966; b.p. 177; i.w.; s.al.

cyclohexanol, benzoate (cyclohexyl benzoate; cyclohexyl benzenecarboxylate). $C_6H_5COOC_6H_{11}$; m.w. 204.12; b.p. 160 [15]; i.w.; s.al.

cyclohexanol, 2-methyl- (hexahydro-o-cresol). $CH_3C_6H_{10}OH$; m.w. 114.11; col. liq.; b.p. 165-6; s.w.; s.al.

cyclohexanol, 3-methyl-(l) (l-hexahydro-m-cresol). $CH_3C_6H_{10}OH$; m.w. 114.11; syrup; m.p. −47; b.p. 175-6; s.al.

cyclohexanol, 4-methyl- (hexahydro-p-cresol). $CH_3C_6H_{10}OH$; m.w. 114.11; arom. liq.; b.p. 173-4; s.w.; s.al.

cyclohexanone (ketohexamethylene; pimelic ketone). $CO(CH_2)_4CH_2$; m.w. 98.08; col. liq.; b.p. 156.7; s.w.; s.al.

cyclohexanone, 2, 5-dimethyl-(d). $COCH(CH_3)CH_2CH_2CH(CH_3)CH_2$; m.w. 126.11; oil; b.p. 172-4 [760]; i.w.; s.al.

cyclohexanone, 2-methyl-. $COCH(CH_3)CH_2CH_2CH_2CH_2$; m.w. 112.09; liq.; b.p. 163; i.w.; s.al.

cyclohexanone, 3-methyl-. $COCH_2CH(CH_3)CH_2CH_2CH_2$; m.w. 112.09; liq.; b.p. 168; i.w.; s.al.

cyclohexanone, 4-methyl-. $COCH_2CH_2CH(CH_3)CH_2CH_2$; m.w. 112.09; liq.; b.p. 169; i.w.; s.al.

cyclohexanone, pinacol. See 1, 2-ethanediol, 1, 2-dicyclohexyl-.

cyclohexene (1, 2, 3, 4-tetrahydrobenzene). $CH_2CH_2CH_2CH_2CH{:}CH$; m.w. 82.08; col. liq.; m.p. −103.7; b.p. 83; i.w.; s.al.

1-cyclohexene-1-carboxylic acid (2, 3, 4, 5-tetrahydrobenzoic acid). $CH_2(CH_2)_3CH{:}CCOOH$; m.w. 126.08; cr.; m.p. 29; b.p. 243.

1-cyclohexene-1, 2-dicarboxylic acid (△ [1]-tetrahydrophthalic acid). $C_6H_8(COOH)_2$; m.w. 170.08; monocl. leaf. f.w.; m.p. 120; s.w.

cyclohexene, 3-isopropyl-6-methylene-. See β-phellandrene.

cyclohexene, 4-isopropyl-1-methyl-3-. See menthene.

cyclohexene, 4-methyl- (1, 2, 3, 6-tetrahydrotoluene). $CH{:}CHCH_2CH(CH_3)CH_2CH_2$; m.w. 96.09; liq.; b.p. 102-3; i.w.; s.al.

2-cyclohexen-1-one, 3-hydroxy-. See 1, 3-cyclohexanedione.

cyclohexyl acetate. See cyclohexanol, acetate.

cyclohexylamine (hexahydroaniline; aminocyclohexane). $C_6H_{11}NH_2$; m.w. 99.11; col. liq.; b.p. 134; s.w.; s.al.

cyclohexylamine, N-butyl-. $C_6H_{11}NH(CH_2)_3CH_3$; m.w. 155.17; col. liq.; b.p. 200-4; s.w.; s.al.

cyclohexylamine, N-ethyl-, cyclohexylethylthiolthionocarbamate. See under carbamic acid, cyclohexylethylthiolthiono-.

cyclohexylamine, N-ethyl-. $C_6H_{11}NHC_2H_5$; m.w. 127.14; col. liq.; b.p. 163-5 [745]; s.w.; s.al.

cyclohexylamine, N-methyl-. $C_6H_{11}NHCH_3$; m.w. 113.13; col. liq.; b.p. 145-7; s.w.; s.al.

cyclohexyl benzoate. See cyclohexanol, benzoate.

cyclohexyl bromide. See cyclohexane, bromo-.

cyclohexyl chloride. See cyclohexane, chloro-.

cycloid. Curve which represents the path of a point on circle as it rolls on a straight line.

cyclol linkage. Protein linkage (=N—C[OH]=).

cyclonol. Methyl cyclohexanone glyceryl acetate; sp.gr. 1.074; b.p. 250; boiling range at 20 mm. 130°-140°; i.w.; solvent for fats, resins, oils, etc.; emulsifying properties, used in making soap.

cycloparaffine (cyclane). Hydrocarbon of the general formula C_nH_{2n} containing closed chains of 3 or more carbon atoms.

1, 3-cyclopentadiene. $CH{:}CHCH{:}CHCH_2$; m.w. 66.05; col. liq.; b.p. 42.5; i.w.; s.al.

cyclopentane (pentamethylene). $CH_2CH_2CH_2CH_2CH_2$; m.w. 70.08; col. liq.; m.p. −93.3; b.p. 49.5; i.w.; s.al.

cyclopentane, bromo- (cyclopentyl bromide). C_5H_9Br; m.w. 148.99; b.p. 137-9.

cyclopentanecarboxylic acid, 3-carbamyl-1, 2, 2-trimethyl-. See α-camphoramic acid.

cyclopentanecarboxylic acid, 3-carbamyl-2, 2, 3-trimethyl-. See β-camphoramic acid.

cyclopentanecarboxylic acid, 1, 2, 2, 3-tetramethyl-. See campholic acid.

1, 2-cyclopentanedicarboxylic acid. $C_6H_8(COOH)_2$; m.w. 158.08.
cis: need. f.w.; m.p. 139; b.p. anh. 150-60; s.w.; s.al.
trans: warts f.w.; m.p. 161; s.w.; s.al.

1, 3-cyclopentanedicarboxylic acid. $C_6H_8(COOH)_2$; m.w. 158.08.
cis: pr.f.w.; m.p. 121; s.w.; s.al.
trans: pr.f. CCl_4; m.p. 88; s.w.

1, 3-cyclopentanedicarboxylic acid, 1, 2, 2-trimethyl-(cis). See camphoric acid.

1, 3-cyclopentanedicarboxylic acid, 1, 2, 2-trimethyl-(trans). See isocamphoric acid.

1, 3-cyclopentanedicarboxylic anhydride. See camphoric anhydride.

cyclopentanol. $CH_2CH_2CH_2CH_2CHOH$; m.w. 86.08; oil; b.p. 139-40; s.w.; s.al.

cyclopentanone (ketopentamethylene; adipic ketone). $COCH_2CH_2CH_2CH_2$; m.w. 84.06; oil; m.p. −58.2; b.p. 130.6; s.w.; s.al.

cyclopentene. $CH{:}CHCH_2CH_2CH_2$; m.w. 68.06; liq.; m.p. −93.3; b.p. 45-6; i.w.; s.al.

cyclopentene, 2-acetyl-1, 3, 3, 4, 4-pentamethyl-. See desoxymesityl oxide.

1-cyclopentene-1-ethylamine, 2, 3, 3-trimethyl-. See β-camphylamine.

cyclopentyl bromide. See cyclopentane, bromo-.

cyclopropane (trimethylene). $CH_2CH_2CH_2$; m.w. 42.05; col. gas; m.p. −126.6; b.p. −34.4; i.w.; s.al.

cyclopropanecarboxylic acid (ethylene acetic acid). $CH_2CH_2CHCOOH$; m.w. 86.05; m.p. 18; b.p. 183; s.w.; s.al.

1, 1-cyclopropanedicarboxylic acid. See vinaconic acid.

cyclopropane, 1, 1-dimethyl- (1, 1-dimethyltrimethylene). $(CH_3)_2CCH_2CH_2$; m.w. 70.08; b.p. 21; i.w.; s.al.

cyclopropane, methyl-. $CH_3CHCH_2CH_2$; m.w. 56.06; col. gas.; b.p. 5; s.w.; s.al.

1, 2, 3-cyclopropanetricarboxylic acid. $C_3H_3(COOH)_3$; m.w. 174.05; col. cr.; m.p. 220; s.w.; s.al.

cycloses. Compounds found in plants having formula, $C_6H_{12}O_6$, e.g. inisitols.

cyclotron. Magnetic resonance accelerator used in investigating atomic structures.

cylase, amino-. See histozyme.

cylindroid. Cylindrical-like solid with elliptical right sections.

Cymanol. Methyl isopropyl benzene.

m-cymene (m-isopropyltoluene; 3-isopropyl-1-methylbenzene; isocymene). $CH_3C_6H_4CH(CH_3)_2$; m.w. 134.11; col. liq.; m.p. < −25; b.p. 175.7; s.al.

o-cymene (o-isopropyltoluene; 2-propyl-1-methylbenzene). $CH_3C_6H_4CH(CH_3)_2$; m.w. 134.11; col. m.p. −73.5; b.p. 175; i.w.; s.al.

p-cymene (cymene; p-isopropyltoluene; 4-isopropyl-1-methylbenzene). $CH_3C_6H_4CH(CH_3)_2$; m.w. 134.11; liq.; m.p. −73.5; b.p. 176; i.w.; s.al.

p-cymene, 2-acetyl-. See acetophenone, 5-isopropyl-2-methyl-.

p-cymene, 2-amino-. See carvacrylamine.

p-cymene, 2-bromo- (2-bromo-4-propyl-1-methylbenzene). $CH_3C_6BrH_7$; m.w. 213.02; liq.; 233-5; i.w.; s.al.

2-p-cymenecarboxylic acid, 3-hydro-. See o-thymotic acid.

2, 5-p-cymenediol. See thymohydroquinone.

p-cymene, hexahydro-. See p-menthane.

p-cymene, 2-nitro- (4-isopropyl-methyl-2-nitrobenzene). $C_{10}H_{13}NO_2$; m.w. 179.11; arom. oil; b.p. 152; i.w.; s.al.

2-p-cymenol. See carvacrol.

3-p-cymenol. See thymol.

cymidine. See carvacrylamine.

cymogene. See rhigolene.

cymophane. See chrysoberyl.

cymophenol. See carvacrol.

2-p-cymylamine. See carvacrylamine.

3-p-cymylamine. See thymylamine.

cyonin. Hormone of chorionic origin protein in nature, whose function to sustain a female sex hormone balance favorable to the maintenance of pregnancy.

cypripedium (lady's slipper; American valerian; nerve root). Dried rhizome and root of Cypripedium species used in medicine as nerve stimulant.

cyrtolite. A mineral containing beryllium and zirconium.

cyst. Resistant sac-like structure.

l-cysteine (l-2-amino-3-mercaptopropanoic acid; l-β-mercaptoalanine) $HSCH_2CH(NH_2)COOH$; m.w. 121. cr. powd.; s.w.

d-cystine. $[SCH_2CH(NH_2)COOH]_2$; w. 240.23; wh. hex. pl.; m.p. 247 i.al.

dl-cystine. $[SCH_2CH(NH_2)COOH]_2$; w. 240.23; need.; m.p. 260.

l-cystine (l-3, 3′-dithiobis [2-aminopropanoic acid]; l-β, β′-dithiodialanine; dicysteine). $[SCH_2CH(NH_2)COOH]_2$; m.w. 240.23; hex. pl. f.dil. hcl.; i.al.

meso-cystine. $[SCH_2CH(NH_2)COOH]_2$; m.w. 240.23.

cytase. An enzyme which decomposes cellulose.

cytisine (ulexine; sophorine; baptitoxine). $C_{11}H_{14}N_2O$; m.w. 190. col. lg. rhomb. cr.; m.p. 152-3; s. s.al.

β-cytisolidine. See quinoline, 6, dimethyl-.

cytoplasm. The main mass of protoplasm or cell substance.

cytology. Branch of biology treating cells.

D

ctron. Orbital electron with energy te of azimuthal quantum number 2.
. relation. See Duane-Hunt law.
vel. See D-state.
nes. The two main lines of the dium spectrum forming a doublet.
reaction. Disintegration of nuclei deuterons with proton emission.
ate (D-level). State of an atom of imuthal quantum number 2.
nol. An alkyl aryl sodium sulfonate ed as an antipitting agent in the ating of nickel.
Deflocculated Acheson graphite.
ntex. A combination of miscible rpene alcohols and hydrocarbons ed as a wetting-agent and penetrant the laundry industry.
in's solution. A disinfectant used in edicine, made by reaction between alorine and sodium carbonate solu-on, with the formation of sodium hloride and sodium hypochlorite.
embert principle. Any displacement a constrained particle is perpen-icular to the resultant of the con-raining reactions.
ton's law of partial pressures. The ressure exerted by a mixture of gases equal to the sum of the separate ressures which each gas would exert it alone occupied the whole volume.
mar, gum (dammar). See gum damar.
mard. Synthetic oil soluble tar-acid esin.
marda. Synthetic oil soluble tar-acid esin.
nbose. See i-inositol.
niana. The dried leaf of a plant, used in medicine.
nmar. See gum damar.
mping. Gradual decrease in amplitude of a vibrating body or electrical sine wave.
mping capacity. The ability of a material to transform part of the energy introduced during oscillation into heat.
mping coefficient. Logarithmic decrement divided by period or multiplied by frequency, in a train of damped oscillations.
mping factor. Amplitude of any one of a series of damped oscillations divided by amplitude of the following one.
naite. A variety of mispickel (q.v.) which contains cobalt.
nburite. A mineral, $CaO \cdot B_2O_3 \cdot 2SiO_2$; rhomb., yel.-col.; sp.gr. 2.93-3.02; hardness 7.
ndyroll. Skeleton roll covered with wire cloth in which a design is worked for forming watermark in paper making.
phnetin (7, 8-dihydroxycoumarin). $OCOCH{:}CHC_6H_2(OH)_2$; m.w. 178.05; [illegible]
ps. yel. need.; m.p. 256; s.w.; s.al.
arco. The trade name for a brand of decolorizing carbon.
arcy law. The velocity of flow of a fluid in a porous medium, subjected to unequal pressure, is proportional to the pressure gradient.
rk current. Relatively low current obtained when a selenium cell is connected in the dark with a source of e.m.f. as indicated by an ammeter in series.
rk red silver ore. See pyrargyrite.

Dartex. See alloprene.
Darvan. Polymerized organic salts of sulfonic acids of the alkyl aryl type used as a dispersing agent in the textile, color and paint industries.
dash-pot. Device for damping out irregular disturbances by means of the resistance offered by a fluid.
dative bond. See semi-polar bond.
datolite. A mineral, $Ca(B \cdot OH)SiO_4$; monocl., col., wh., yelsh., redsh., grnsh.; sp.gr. 2.89-3.00; hardness 5.0-5.5.
datum. Point of reference from which heights are measured.
datum line. Base or fundamental line from which measurements or graphic calculations are made.
daturine. See hyoscyamine.
dl-daturine. See atropine.
daubrelite. See chromium sulfide(ous).
Daxad. Polymerized organic salts of sulfonic acids of the alkyl aryl type used as a dispersing, flotation and emulsifying agent.
daylight factor. Percentage of outdoor light reaching any point inside a building.
de Broglie equation. Expression for wave length of the de Broglie wave of a moving electron.
de Broglie frequency. Frequency of energy of a moving electric particle, equal to the energy divided by the Planck constant.
de Broglie wave (electron wave; phase wave). Wave or group of waves associated with an electron or other elementary particle.
deactivation. Chemical removal of oxygen from water to prevent corrosion.
dead beat. Coming to rest without oscillation. See also aperiodic.
dead center. Point in rotation of crank of reciprocating engine when piston thrust produces no turning moment on crankshaft.
dead load. A constant load whose pressure does not vary.
dead oil. See creosote and oil, heavy.
deadly nightshade. See belladonna.
deaminase. Enzyme which acts on amino group to form ammonia and hydroxy or keto compounds, e.g. adenase.
deblooming. Removal of fluorescent substances from petroleum or other aromatic products.
Debye characteristic temperature. Temperature at which the atomic heat of a simple cubic crystal equals 5.67 calories per degree.
Debye effect. Selective absorption of Hertzian waves in dielectrics, because of appafent existence of molecular dipoles.
Debye frequency effect. Effect on electrolytic conductances of an alternating current of high frequencies; dispersion of the conductance.
Debye function. Representation of specific heat of a monatomic crystalline solid at various temperatures.
Debye ring. See powder pattern.
Debye-Scherrer ring. See powder pattern.
Debye-Sears effect. See Brillouin effect.
Debye unit. Unit of measure of dipole moment equal to 10^{-18} e.s.u.

decahydronaphthalene. See naphthalene, decahydro-.
decalescence. Absorption of heat during heating of steel through its critical range.
decalin. See naphthalene, decahydro-.
decamethylene glycol. See 1, 10-decanediol.
decanal. See capraldehyde.
decanamide. See capramide.
decane (n-decane). $CH_3(CH_2)_8CH_3$; m.w. 142.17; col. liq.; m.p. −30 to −32; b.p. 174; i.w.; s.al.
decane, 1-amino-. See decylamine.
decanedioic acid. See sebacic acid.
1, 10-decanediol (decamethylene glycol). $CH_2OH(CH_2)_8CH_2OH$; m.w. 174.17; m.p. 71.5; b.p. 179 [11]; s.w.; s.al.
decane, 1-iodo- (prim-n-decyl iodide). $CH_3(CH_2)_9I$; m.w. 268.08; liq.; b.p. 132 [16].
decanenitrile. See caprinitrile.
decanoic acid. See capric acid.
decanoic anhydride. See capric anhydride.
1-decanol (n-decyl alcohol; nonylcarbinol). $CH_3(CH_2)_8CH_2OH$; m.w. 158.17; col. visc. liq.; m.p. 7; b.p. 231; i.w.; s.al.
4-decanol (hexylpropylcarbinol; sec-decyl alcohol). $CH_3(CH_2)_5CHOH(CH_2)_3CH_3$; m.w. 158.17; thk. col. oil.; b.p. 210-1; i.w.; s.al.
1-decanol, acetate (n-decyl acetate). $CH_3COO(CH_2)_9CH_3$; m.w. 200.19; col. liq.; m.p. −15.05; b.p. 191.5; i.w.; s.al.
1-decanol, nitrate (n-decyl nitrate). $CH_3(CH_2)_9ONO_2$; m.w. 203.17; liq.; b.p. 127-8 [11].
1-decanol, nitrite (n-decyl nitrite). $CH_3(CH_2)_9ONO$; m.w. 187.17; liq.; b.p. 105-8 [12].
1-decanol, sulfate (n-decyl sulfate; di-n-decyl sulfate). $[CH_3(CH_2)_9]_2SO_4$; m.w. 378.39; m.p. 37.6-7.8.
2-decanone (methyl octyl ketone). $CH_3COC_8H_{17}$; m.w. 156.16; liq.; m.p. 3.5; b.p. 211; i.w.; s.al.
3-decanone (ethyl heptyl ketone). $C_2H_5CO(CH_2)_6CH_3$; m.w. 156.16; liq.; b.p. 211; s.al.
4-decanone (hexyl propyl ketone). $CH_3(CH_2)_2CO(CH_2)_5CH_3$; m.w. 156.16; col. liq.; m.p. −9; b.p. 207; s.w.; s.al.
decanoyl chloride. See capryl chloride.
decantation. Pouring off of supernatent liquid from settled matter at the bottom of the container.
decarboxylase (carboxylase). Enzyme which liberates CO_2 from carboxyl groups.
decarburization. Process of removing carbon from steel.
decatizing. Process of finishing cloth under tension by steam.
deceleration. Decreasing of velocity.
1-decene (n-decylene). $CH_2{:}CH(CH_2)_7CH_3$; m.w. 140.16; col. liq.; m.p. −87; b.p. 172; i.w.; s.al.
Deceresol OT. Sodium salt of sulfonated ester of a dicarboxylic acid; used in wetting, scouring and emulsifying; dyeing assistant.
dechenite. A natural lead metavanadate, $Pb(VO_3)_2$.
decibel (DB). Least difference in sound intensity which the ear can easily detect. Unit of power-level difference used in telephone engineering.

deciduous. Pertaining to insects, birds or animals that periodically shed wings, feathers, horns, etc.; pertaining to plants or trees that shed leaves or fruits in fall.
decigram (dg.). $\frac{1}{10}$th of a gram.
decimal equivalent. Fraction expressed as a decimal.
decimeter (dm.; decimeter). $\frac{1}{10}$th of a meter.
1-decine. See 1-decyne.
declination. Angular distance from celestial equator, of a point on the celestial sphere, measured toward the celestial poles.
declination, magnetic. Angle between the magnetic meridian and geographical meridian; angular deviation of a compass needle from true north.
declinometer. Instrument for measuring magnetic or astronomical declination.
decoction. An extract of soluble constituents from a crude material.
n-decoic acid. See capric acid.
decomposition. The breaking up of a substance into its constituent parts.
decomposition, double (double replacement). A type of chemical reaction in which there is an exchange of corresponding parts between two compounds, e.g.

$$BaCl_2 + CuSO_4 \rightarrow BaSO_4 + CuCl_2.$$

decomposition potential (decomposition voltage). Minimum voltage required for appreciable electrolysis.
decomposition, simple. See simple decomposition.
decortication. The shelling of seeds previous to the extraction of their oil.
decremeter. Device for measuring logarithmic decrement of an electric oscillation.
decrepitation. The break-up with a crackling noise of the crystalline structure of certain minerals and salts when heated.
n-decyl alcohol. See 1-decanol.
sec-decyl alcohol. See 4-decanol.
tert-decyl alcohol. See 4-heptanol, 4-propyl-; 3-octanol, 3-ethyl-.
n-decyl aldehyde. See capraldehyde.
n-decylamide. See capramide.
decylamine (n) (1-aminodecane). $CH_3(CH_2)_9NH_2$; m.w. 157.19; leaf.; m.p. 17; b.p. 218; i.w.
n-decylene. See 1-decene.
n-decyl esters. See under 1-decanol.
n-decylic acid. See capric acid.
n-decylic amide. See capramide.
n-decylic anhydride. See capric anhydride.
prim-n-decyl iodide. See decane, 1-iodo-.
1-decyne (1-decine; n-octylacetylene). $CH{:}C(CH_2)_7CH_3$; m.w. 138.14; col. liq.; m.p. −40; b.p. 80-2 [23]; i.w.; s.al.
defecation. A process of purification or freeing from impurities; the voiding of excrement.
deers' tongue. The leaf of a plant, used in medicine, perfumery, and in flavoring tobacco.
defervescence. Stopping of boiling or bubbling of a liquid.
defining power. The ability of an objective to give sharp and colorless images.
definite composition, law of. Every chemical compound has a definite and inalterable composition by weight.
deflagration. Rapid combustion with

the evolution of light and heat.

deflocculating. Thinning consistency of enamel or glaze slip by addition of an electrolyte.

deflocculation. See peptization.

Defluorite. A specially prepared tricalcium phosphate for removing sodium fluoride from water.

deformability (polarisability). Electric or dipole moment induced in a molecule by an electric field of unit intensity.

degas. See outgas.

degenerate system. A system having several distinct wave functions corresponding to the same energy level.

degradation. Change to lower frequency and quantum energy of a particular radiation.

degras. A crude wool grease used in the production of soaps, varnishes, lanolin, printing inks and in the dressing of leather. See also adeps lanae.

degras, moellon. A waste fat obtained in the manufacture of chamois leather and used to dress leather.

degreasing. The removal of grease from metals, etc. by the use of solvents or chemical cleaners.

degrees of freedom. The number of independently variable quantities such as temperature, pressure and concentration, which may be altered at will without producing an alteration in the number of phases in a system or, the number of such variables which must be fixed arbitrarily to completely define the system.

degumming. Process of removing natural gum (ceresin) from silk; see also boiling-off.

dehydration. Removal of free or combined water from a compound.

dehydroacetic acid (3-acetyl-6-methyl-2, 4-pyrandione). $OCOCH(COCH_3)CO-CH:C(CH_3)$; m.w. 168.06; rhomb. need. or pl.; m.p. 109; b.p. 270; s.al.

dehydrogenase. Enzyme which engages in biochemical oxidation, acting by the removal of hydrogen from its substrate.

dehydrogenation. Removal of hydrogen from a compound without replacement by another element.

dehydromucic acid (2, 5-furandicarboxylic acid). $C_4H_2O(COOH)_2$; m.w. 156.03; pl. f.h.al., need. f.w.; m.p. >320; i.w.

dehydromucic acid, dimethyl ester. $C_4H_2O(COOCH_3)_2$; m.w. 184.06; need. f.w.; m.p. 109-10; b.p. 154-6 [12]; i.w.; s.al.

dehydromucic acid, tetrahydro-3, 4-dihydroxy-. See isosaccharic acid.

dehydromucyl chloride (2, 5-furandicarbonyl chloride). $C_4H_2O(COCl)_2$; m.w. 192.93; yel. pl.; m.p. 80; b.p. ca. 245; s.w.

Dekorit. Synthetic tar-acid resin.

del (∇). Directional differentiation which when applied to a scalar function of space, gives the greatest rate of change of the function in magnitude and direction at every point.

deliquescence. Absorption of atmospheric water by a substance and the dissolving of the substance in the water thus absorbed, a phenomenon displayed by crystals having lower vapor pressure than the partial pressure of the vapor in the air.

delphine. $C_{34}H_{47}NO_9$; m.w. 577.37; rhomb. pl.

delphinine. A white, crystalline, poisonous alkaloid used in medicine.

delphinine. A white, crystalline, poisonous alkaloid used in medicine.

delphinium (larkspur). Ripened seed of d. ajacis, containing two alkaloids: ajacine, $C_{18}H_{34}O_4N$, and ajoconine, $C_{17}H_{33}O_3N$; used for destruction of lice in hair.

delta (Δ). Denotes a double bond. See also abbreviations and symbols.

delta ray. Electrons emitted by a substance being bombarded by alpha particles.

delta voltage. Potential between lines or terminals of a polyphase circuit.

demal. A unit of density defined as one gram equivalent per cubic decimeter.

demand factor. Ratio of measured kilowatt load to sum of rated kilowatts of apparatus connected to source of supply.

demerara index. Sum of per cent of sucrose in cane and tons of cane to make 1 ton of sugar.

demitint. An intermediate shade of a color or tint.

demulcent. Soothing substance usually applied to mucous membrane.

demulsibility. Resistance of an oil to emulsification.

demulsification number. See steam emulsion number.

denaturation. The irreversible conversion of a protein into a metaprotein; the addition to alcohol of a disagreeable tasting or poisonous substance to render it unfit for use as a beverage or in medicine.

denatured alcohol. See alcohol, denatured.

denier. A unit of yarn number; the number of unit weights of .05 grams per 450-meter length; equal to the number of grams per 9,000 meters. The "New International Denier" is equal to number of grams per 10,000 meters.

denitration. Removal of nitric or nitrous compounds.

denitrification. Bacterial reduction in the soil of nitrates, to nitrites and ammonia and other nitrites to free nitrogen.

densimeter. An instrument used to obtain the specific gravity of liquids.

density. Weight per unit volume, expressed in such terms as grams per cubic centimeter or pounds per cubic foot, etc.

density, apparent. Weight of a definite volume of loose dry material including air-spaces between particles.

density-in-phase. Number of points, each of which corresponds to one of the particles of a system, per unit volume of the phase space used to represent the state of the system.

dentine. That part of a tooth which surrounds the pulp cavity and is covered externally by the enamel.

dentist's amalgam. An alloy of mercury 70, and copper 30.

Deo-Base. Deodorised kerosene.

deoxidation. Removal of oxygen; reduction.

dephlegmator. Specially designed distilling column where vapors are brought into contact with condensate.

dephlegmation (partial condensation). The cooling of a mixed vapor to a definite temperature and condensation of a portion of the vapor richer in higher boiling constituents than the original vapor.

depolarization. Elimination of counter e.m.f. by chemical or mechanical methods.

deposition potential. Minimum difference in potential between an electrode and its surrounding electrolyte necessary to deposit a particular ion.

depressor. Material which prevents mineral from floating in a flotation process.

depside. One of a series of anhydrides formed by condensation of a carboxylic group of a phenol carboxylic acid with an hydroxyl group of the same or a similar acid, e.g. $HO\cdot C_6H_4CO\cdot O\cdot C_6H_4COOH$.

depth magnification. See axial magnification.

derbylite. A mineral, $6FeO\cdot Sb_2O_3\cdot 5TiO_2$; rhomb., blk.; sp.gr. 4.512-4.530; hardness 5.

derivation. See differentian.

derivative. In organic chemistry a compound is considered a derivative of that hydrocarbon which contains the same number of carbon atoms in the same arrangement.

derivator (tangent meter). Instrument used to measure slope of a curve at any point.

derived protein. Proteins obtained by modification, denaturation, or partial decomposition, as by hydrolysis, of native proteins, e.g. coagulated proteins.

derived unit. Unit derived from the fundamental units of time, length, and mass, e.g. units of density, velocity, etc.

derris. A poisonous root used in the Far East.

derris resinate. Extract of derris root.

derritol. $C_{23}H_{38}O_4$; m.w. 370.17; yel. need. f. ma. al.; m.p. 161.

descloizite. A mineral containing lead, zinc, and vanadium.

desiccant. Substance having an affinity for water and used for drying purposes.

desiccator. Apparatus used for drying.

desiccate. To dry.

desizing. Process of removing starch or other sizing materials from textiles.

Deslandres diagram. Chart of spectral band system showing frequencies in an ascending order of quantum numbers of the upper and lower energy states.

desmine. See stilbite.

desmolase. An enzyme which produces molecular changes through addition or removal of oxygen atoms.

desmotropy. Dynamic isomerism.

desorption. Release of an adsorbed gas.

desoxalic acid (1, 2-dihydroxy-1, 1, 2-ethanetricarboxylic acid). $(COOH)\cdot CH(OH)C(OH)(COOH)_2$; m.w. 194.05; hyg. cr.; s.w.; s.al.

desoxybenzoin (α-phenylacetophenone, benzyl phenyl ketone). $C_6H_5CH_2CO\cdot C_6H_5$; m.w. 196.09; wh. pl. f.al.; m.p. 60; b.p. 322; s.w., s.al.

desoxybenzoin, α, α'-benzalbis-. See benzalmarone, isobenzalmarone.

desoxymenityl oxide (2-acetyl-1, 3, 3, 4, 4-pentamethylcyclopentene). $C_{10}H_{16}O$; m.w. 180.16; liq.; b.p. 218-20; i.w.

Despretz law. The temperature of maximum density of water is lowered below 4° C. on the addition of a solute, by an amount proportional to the concentration of the solution.

destruction limit. Limiting shearing stress where a crystal begins to lose its lattice structure, as shown by its Laue x-ray pattern change.

destructive distillation. Distillation where a break-down to simpler products results, e.g. destructive distillation of wood or coal to give charcoal or coke.

detailed balancing. Process by which an ionized atom's energy is transformed to a free electron or other particle when the atom is neutralised and the particle is sent off with additional velocity. See microscopic reversibility, principle of.

Detanol. A derivative of a higher sulfonated alcohol used as a wetting agent and detergent in the textile industry.

detergent. Any material that aids in removing undesirable matter from the surface to be cleaned.

detergent, alkaline. A water soluble product, having an alkaline reaction and detergent qualities but containing no soap.

determinism. See causality.

detonator. A metal cylinder containing mercuric fulminate or other highly unstable chemicals used to set off a charge of high explosives.

detritus. Redeposited matter worn off rocks.

detrusion. Lateral deformation produced by a shearing force.

deuterium. D, the heavy isotope of hydrogen, having an atomic weight of two, discovered by Urey.

deuterium oxide. D_2O; see heavy water.

deuteron (D^2, diplon). Nucleus of deuterium.

developer. A weak organic reducing agent used in photography to reduce the silver salts upon which light has acted to black metallic silver, thus rendering visible the latent image.

developing. Drying process which whiteness is improved by diazotized colored compound, after it has been adsorbed by the cloth, and coupling with a phenol or amine, making visible the latent image of negative or positive picture in photography by means of a developer.

deviation, standard (mean error of mean square, mean square radius of gyration). Root mean square deviation from the mean, a measure of variability in results obtained in separate trials of a given determination, hence a measurement of precision.

devil's apple. See stramonium.

devitrification. Crystallization held for a time at a temperature below its liquidus.

dew point. Temperature at which water vapor in the air begins to condense.

Dewar flask. See thermos flask.

dextrin (starch gum, British gum, amylin, gommeline). $(C_6H_{10}O_5)_x$; (162.08)$_x$; col. amor.; s.w.; intermediate colloidal substances formed during hydrolysis of starch, dextrorotatory, used in adhesives, stiffening compositions.

dextrogyrate. See dextrorotatory.

dextronic acid. See d-gluconic.

dextrorotatory (dextrogyrate). Rotating the plane of polarized light to the right. In these cases the sign of rotation is preceded by a + sign.

dextrose. See d-glucose.

denincrification. Removal of zinc from brass during corrosion.

diabase. A basic igneous rock.

diacetamide. $(CH_3CO)_2NH$; 101.06; col. need. f. et., m.p. 69; b.p. 223.5; s.w.; s.al.

diacetamide, n-phenyl-. See acetanilide.

diacetanilide (n-phenyldiacetamide, n-diacetylaniline). $(CH_3CO)_2NC_6H_5$; m.w. 177.09; col. pl. f. leaf., m.p. 37-8; b.p. 142 [15]; s.w.; s.al.

diacetanilide, p-ethoxy- (n, n-diacetylphenetidine). $(CH_3CO)_2NC_6H_4OC_2H_5$; m.w. 221.13; need., m.p. 148-50; b.p. 182 [7]; s.al.

diacetin. See glyceryl diacetate.

diacetoacetic acid, ethyl ester (2-acetyl-3-oxobutanoate, ethyl acetylacetoacetate). $(CH_3CO)_2CHCOOC_2H_5$; m.w. 172.09; col. oil; s.w., s.al.

diacetone alcohol. See 2-pentanone, 4-hydroxy-4-methyl-.

diacetonealkamine, benzoyltriacetyl-. See β-eucaine.

diacetosuccinic acid, diethyl ester (diethyl 2, 3-diacetylbutanedioate, α, β-diacetylsuccinate). $(CH_3CO)_2(COOC_2H_5)_2$; m.w. 258.14.
- α_1 oil; s.w.; s.al.
- α_2 cr.; m.p. 20-2; s.al.
- α_3 pr.; m.p. 31-2; i.w.; s.al.
- α_4 rhomb.; m.p. 89-90; s.al.

diacetyl. See 2, 3-butanedione.

diacetyl dioxime. See glyoxime, methyl-.

diacetyl peroxide. See acetyl peroxide.

diacolation. Percolation and extraction of drugs, with a solvent, under pressure.

diactinic. Transparent to actinic rays.

diagram line. Line in x-ray spectrum corresponding to one of the quantum transitions derivable from the energy level diagram for the atom from which it issues. Line in x-ray spectrum which fits into the plan of Moseley curves.

Dialron. An acrylate resin, a clear plastic, available in colored and colorless transparent sheets, tubes, rods, and molding powders.

...asquers, of good machining, ...ng, and extruding properties, ...nt to oils.
...es barbituric acid, 5, 5-diallyl-.
... A complex, natural silicate ...es an ornamental stone.
... See 1, 5-hexadiene.
...amine (di-2-propenylamine). ...;$CHCH_3)_2NH$; m.w. 97.09; liq.; ...11-2.
...ether. See allyl ether.
...sulfide. See allyl sulfide.
...trisulfide. See allyl trisulfide.
...ite. See rhodochrosite.
...mide. See uramil.
... acid (5-hydroxybarbituric acid; ...onyl urea). NHCONHCO-CH(OH)-NHCO; m.w. 144.05; col. tetr.; s.w.
...s. Process of separating colloids ... crystalloids by diffusion thru ...ial-permeable membrane.
...ter, statistical. See statistical ...ester.
...gnetic. Pertaining to substances ...lled by a magnet or bodies ...ch tend to set their longest ...ension at right angles to the lines ...orce in a magnetic field and have ...permeability less than 1, e.g. ...uth.
...ne. Substance containing two ...no, NH_2, groups.
...oazobenzene. See azobensene, ...nino-.
...minoazobenzene fluosilicate. ...$H_2)_2C_6H_4N_2C_6H_3)_2H_2SiF_6$; m.w. ...30; cinnamon br. need.; m.p. 220; ...5% al.
...minobenzoic acid fluosilicate. ...$H_2C_6H_4COOH)_2H_2SiF_6$; m.w. ...20; pr. wh.; s. 95% al.
...nophenol hydrochloride. See ...ol, 2, 4-diamino-, dihydrochloride.
...nd (bortz, carbonado). A natural ...stalline form of carbon; cub., ... or sl. yelsh., also yel., red, grn., ... or blk.; a precious stone when ...r and without flaws, an abrasive.
...ndoid. Organic compound in ...ch skeletal carbon atoms are ...anged in same order as carbon ...ms in the diamond lattice.
...lamide, acet-. $CH_3CON(C_5H_{11})_2$; ...r. 199.20; col. to amber; sp.gr. ...^{20}; b.p. 126-141 ^{10}.
...lamine (di-n-amylamine). $[CH_3-(CH_2)_4]_2NH$; m.w. 157.19; col. liq.; ...202-3 ^{748}; s.w.; s.al.
...lamine, butyl-. $C_4H_9N(C_5H_{11})_2$; ...r. 213.25; lt. yel.; sp.gr. 0.788 ^{20}; ...229-241.
...lamine, monobutyl-. See diamyl-...ine, butyl-.
...lene. See dl-limonene.
...l ether. See amyl ether.
...l ketone. See 6-hendacanone.
...l maleate. See maleic acid, ...myl ester.
...l naphthalene. See naphthalene, ...myl-.
...l oxalate. See oxalic acid, diamyl-.
...l nitrosamine. $(C_5H_{11})_2NNO$; ...w. 186.19; yel.; sp.gr. 0.891 ^{20}; ...120-130 at 10 mm.
...l phosphate. $(C_5H_{11})_2HPO_4$; ...upy liq.; b.p. decomp.; s.w.; ...d as solvent, plasticizer.
...l phthalate. See phthalic acid, ...myl ester.
...amyl sulfate. See amyl sulfate.
...l sulfide (iso). $[C_5H_{11}]_2S$; m.w. ...1.33; liq.; s.g. 0.84; b.p. 216; i.w. ...l.
...l tartrate. See tartaric acid, ...myl.
...line fluosilicate. $(C_6H_5NH_3)_2-SiF_6$; m.w. 330.20; irreg. pl. wh.; ...p. subl. 230; s.w.; i.al.
...sidine. $[C_6H_3(OCH_3)NH_2]_2$; wh. ...rst.; m.p. 137; s.al.; used as a dye ...ermediate.
...oretic (sudorific). Any drug stimu-...ing the sweat glands.

diaphragm. In optics, device for controlling the area through which light can pass; also a muscle of the mammalian body aiding respiration and defecation.

diarsenic trimethyl. See cacodyl.

diasolysis. Process for dissolving certain substances thru a solvent membrane, e.g. aniline thru a rubber membrane.

diasphaltene (*soft* asphalt). Portion of bitumen soluble in ether or carbon disulfide, but insoluble in mixture of equal parts of ether and alcohol.

diaspore. A mineral, $Al_2O_3 \cdot H_2O$; rhomb., gray wh., pink, yel., br.; sp.gr. 3.3-3.5; hardness 6.5-7.0.

Diastafor. Standardized mixture containing amylolytic and proteolytic enzymes; desizing agent for removal of starches.

diastase. Enzyme that attacks starch, dextrin and allied substances, e.g. amylase (q.v.).

diastatic enzyme. Enzyme which converts starch first into dextrin and ultimately into sugar.

diastrophism. Movement of one part of the lithosphere or earth's crust with respect to another.

diathermous. Capable of transmitting radiant heat.

diathermanous. Pertaining to a good transmitter of infra-red radiation.

Diatol. Diethyl carbonate (90%).

diatom. Valvular microscopic unicellular algae.

diatomaceous earth. See infusorial earth.

diatomite. See infusorial earth.

1, 2-diazine. See pyridazine.

1, 3-diazine. See pyrimidine.

1, 4-diazine. See pyrazine.

diazo reaction. See diazotization.

diazoacetic acid, ethyl ester. See under acetic acid, diazo-.

diazoaminobenzene (1, 3-diphenyltriazine; benzenediazoanilide). $C_6H_5N:NNHC_6H_5$; m.w. 197.11; (1) golden-yel. leaf. or pr.f.al.; m.p. 98-9; i.w.; s.al. (2) yel. pr.; m.p. 80-1.

diazoaminobenzene (isomeric form). $C_6H_5N:NNHC_6H_5$; m.w. 197.11; yel. pr.; m.p. 80-1; i.w.; s.al.

diazoaminobenzene, 4, 4'-dinitro- (1, 3-bis(p-nitrophenyl]-triazene). $NO_2-C_6H_4NNNHC_6H_4NO_2$; m.w. 287.11; yel. cr.; i.w.; s.al.

diazoaminobenzene, 4-methyl-. See triazene, 1-phenyl-3-p-tolyl-.

1, 1'-diazoaminonaphthalene (1, 3-di-1-naphthyltriazene). $C_{10}H_7N:NNH-C_{10}H_7$; m.w. 297.14; yel. leaf. f.al.

2, 2'-diazoaminonaphthalene (1, 3-di-2-naphthyltriazene). $C_{10}H_7N:NNH-C_{10}H_7$; m.w. 297.14; red. need. f. xylene; m.p. 156.

diazoate. Compound of the type RN_2OM.

diazobenzene chloride. See benzenediazonium chloride.

liazobenzene cyanide. See benzenediazonium cyanide.

diazobenzene imide. See benzene, triazo-.

diazobenzene nitrate. See benzenediazonium nitrate.

diazobenzene perbromide. See benzenediazonium tribromide.

diazobenzolic acid. See aniline, *N*-nitro-.

1, 2-diazole. See pyrazole.

diazomethane. See methane, diazo-.

diazotate. Metallic derivative of diazonium hydroxide.

diazotization. Reaction between primary aryl amines and nitrous acid at about 0° C. to form a diazo compound.

dibasic. Pertaining to an acid having two hydrogen atoms replaceable by a metal, e.g. sulfuric acid, H_2SO_4.

dibenzalhydrazine. See benzaldehyde, azine.

dibenzanthracene (aj, a, a' or 1, 2, 7, 8). (1, 2, 7, 8-dinaphthanthracene). $C_{22}H_{14}$; m.w. 278.11; brnsh. need. f. ac. a.; m.p. 195-6; i.w.; i.al.

dibenzo-p-dithiin. See thianthrene.

β-dibromohydrin. See 1-propanol, 2, 3-dibromo-.

dibromosilicane. See silicane, dibromo-.

dibutoxy ethyl phthalate. See phthalic acid, ethyl dibutoxy-.

dibutylamine (di-n-butylamine). $(C_4H_9)_2NH$; m.w. 129.16; col. liq.; b.p. 159-61; s.w.; s.al.

dibutylamine, N-phenyl-. See aniline, N, N-dibutyl-.

di-n-butyl ether. See butyl ether (*n*).

di-sec-butyl ether. See sec-butyl ether.

dibutyl phthalate. See phthalic acid, dibutyl ester.

dibutyl sebacate. See sebacic acid, dibutyl ester.

di-n-butyl sulfate. See butyl sulfate (n).

dibutyl sulfide. See butyl sulfide.

di-sec-butyl sulfide. See sec-butyl sulfide.

dibutyl tartrate. See d-tartaric acid, dibutyl ester.

dibutyl tin dibromide. See tin bromide, di-, dibutyl-.

dibutyl tin dichloride. See tin chloride, di-, dibutyl-.

dichloracetic acid. See acetic acid, dichloro-.

dichloramine (T) (n, n-dichloro-p-toluenesulfonamide). $CH_3C_6H_4SO_2-NCl_2$; m.w. 240.04; pa. yelsh. cr. or powd.; m.p. 83; s.w.; s.al

dichloraniline. See aniline, dichloro-.

dichlorbenzene, para-. See benzene, 1, 4-dichloro-.

dichlorbenzol, ortho-. See benzene, 1, 2-dichloro-.

dichlorethyl ether. See ether, bis-β-chloroethyl.

dichlormethyl silicane. See silicane, dichlormethyl-.

dichlorodifluoromethane. See methane, dichlorodifluoro.

α-dichlorohydrin. See 2-propanol, 1, 3-dichloro-.

β-dichlorohydrin. See 1-propanol, 2, 3-dichloro-.

dichloronitrohydrin. See 2-propanol, 1, 3-dichloro-, nitrate.

dichlorosilicane. See silicane, dichloro-.

dichotomy. Division into two parts; dual classification.

dibenzofuran (diphenylene oxide; biphenylene oxide). $C_6H_4OC_6H_4$; m.w. 168.06; col. leaf. f.al., bl. fluor.; m.p. 87; b.p. 288; i.w.; s.al.

dibenzofuran, 3-amino-. $C_{12}H_7O \cdot NH_2$; m.w. 183.08; need.; m.p. 99-99.5; i.w.; s.al.

dibenzofuran, 2-bromo-. $C_{12}H_7BrO$; m.w. 246.97; leaf.; m.p. 110; b.p. 220 ^{40}; i.w.; s.al.

2-dibenzofurancarboxylic acid. $C_{12}H_7O \cdot COOH$; m.w. 212.06; amor.; m.p. 246-7; s.w.; s.al.

dibenzofuran, 3-nitro-. $O_2NC_{12}H_7O$; m.w. 213.06; yel. need.; m.p. 181-3; i.w.; s.al.

dibenzoic acid, methanediol ester. See benzoic acid, methylene diester.

dibenzoic acid, methylene ester. See benzoic acid, methylene diester.

dibenzo(ai) phenanthrene. See picene.

dibenzo-1, 4-pyran. See xanthene.

dibenzopyrrole. See carbazole.

dibenzothiophene-2, 7-diamine 9-dioxide. See benzidine sulfone.

dibenzoyl. See benzil.

dibenzoyl peroxide. See benzoyl peroxide.

dibenzyl. See bibenzyl.

dibenzylamine. $(C_6H_5CH_2)_2NH$; m.w. 197.13; col. liq.; m.p. −26; b.p. 300; i.w.; s.al.

dibenzylamine, dibenzylthiolthionocarbamate. See under carbamic acid, dibenzylthiolthiono-.

dibenzylamine, n-phenyl- (n, n-dibenzylaniline). $(C_6H_5CH_2)_2NC_6H_5$; m.w. 273.16; need. or pr. f.al.; m.p. 71-2; i.w.; s.al.

dibenzyl disulfide. See benzyl disulfide.

dibenzyl ether. See benzyl ether.

dibenzyl phenol. See phenol, dibenzyl-.

dibenzyl tin acetate. See tin acetate, dibenzyl-.

dibenzyl tin dibromide. See tin bromide, di-, dibenzyl-.

dibenzyl tin dichloride. See tin chloride, di-, dibenzyl-.

dibenzyl tin diiodide. See tin, iodide, di-, dibenzyl-.

p-dibrombenzene. See benzene, 1, 4-dibromo.

dichroism (dichromatism). Salts or solutions exhibiting two colors. Pleochroism in respect to two axes only.

dichroite. See cordierite.

dichromatism. See dichroism.

Dick test. Clinical test to determine an individual's susceptibility to scarlet fever.

di-ortho-cresol. See p, p'-biphenol-3, 3'-dimethyl-.

dicyan(o) diamide. See guanidine, 1-cyano-.

dicyan(o) diamidine. See urea, guanyl-.

α, α'-dicyanodimethylamine. See acetonitrile, iminodi-.

dicyclohexylamine. $(C_6H_{11})_2NH$; m.w. 181.19; col. liq.; b.p. 254-6 ^{745}; s.w.; s.al.

dicysteine. See l-cystine.

di-n-decyl sulfate. See 1-decanol, sulfate.

didiphenylamine fluosilicate. $[(C_6H_5)_2-NH]_2H_2SiF_6$; m.w. 482.26; wh. rods m.p. 169; s. 95% al.

di-n-dodecyl sulfate. See dodecyl sulfate.

didymium. A mixture of praseodymium and neodymium.

die-pressing compound. A material whose separate particles cannot be welded together by pressure and heat but, in the form of contnuous blanks can be shaped by heat and pressure.

dielectric cohesion. Molecular force of a dielectric which opposes an electric field tending to ionise the molecules.

dielectric constant. For a given medium, the reciprocal of the force of attraction between two electric charges of unit value separated by a distance of 1 cm.

dielectric loss. Energy dissipated as heat in a dielectric in an electric field.

dielectric strength. Voltage gradient at which a continuous electrical discharge will take place between two electrodes when substance is placed between electrodes and a potential difference is applied to them.

-diene. Suffix denoting open-chain unsaturated hydrocarbons having two double bonds.

diene reaction. Reaction between substances, at least one of which contains a conjugated double bond thru which the reaction takes place.

diene synthesis. See Diels-Alder synthesis.

Diels-Alder synthesis (diene synthesis). Reaction between a compound containing a conjugated double bond and a compound containing an activated double bond, e.g. butadiene and maleic anhydride.

diesel index number. Product of A.P.I. gravity at 60° F. and aniline point (F.°), divided by 100.

diesel oil. See oil, diesel.

diethanolamine (2, 2'-iminodiethanol; β, β'-dihydroxydiethylamine; iminoethyl alcohol [incorrect]). $HN(CH_2-CH_2OH)_2$; m.w. 105.09; col. liq.; or pr.; m.p. 28; b.p. 268; s.w ; s.al.

diethanolamine, phenyl-. $C_6H_5N(CH_2-CH_2OH)_2$; a white crystalline solid; m.p. 56-68; a dyestuff intermediate.

1, 1-diethoxyethane. See acetal.

diethylamine. $(C_2H_5)_2NH$; m.w. 73.09; col. inflam. liq.; m.p. −50; b.p. 55.5; sp.gr. 0.712 ^{15}; s.w.; s.al.; used in chemical synthesis and special corrosion inhibition applications.

diethylamine, N-cyano-. See cyanamide, diethyl-.

diethylamine, diethylthiolthionocarbamate. See under carbamic acid, diethylthiolthiono-.

diethylamine, β, β'-dihydroxy-. See diethanolamine.

diethylamine, β,β′-dihydroxy-N-methyl-. See ethanol, 2, 2′-methyliminodi-.

diethylamine, N-formyl-. See formamide, N, N-diethyl-.

diethylamine, hydrochloride (diethylammonium chloride). $(C_2H_5)_2NH \cdot HCl$; m.w. 109.56; leaf. f. et. al.; m.p. 219-20; b.p. 330; s.w.; s.al.

diethylamine, β-hydroxy-. See ethanol, 2-ethylamino-.

diethylamine, N-methyl-. $(C_2H_5)_2NCH_3$; m.w. 87.11; col. liq.; b.p. 63-5; s.w.; s.al.

diethylamine, N-nitro- (diethylnitramine; nitric diethylamide). $(C_2H_5)_2NNO_2$; m.w. 118.09; liq.; b.p. 206 [737]; s.w.; s.al.

diethylamine, N-nitroso- (diethylnitrosamine; nitrous diethylamide). $(C_2H_5)_2NNO$; m.w. 102.09; yel. liq.; b.p. 177; s.w.; s.al.

diethylamine, N-phenyl-. See aniline, N, N-diethyl-.

diethyl amino ethanol. See ethanol, 2-diethylamino-.

Diethylaniline. See aniline, N, N-diethyl-.

diethylaniline fluosilicate. $(C_6H_5NHC_2H_5)_2 \cdot H_2SiF_6$; m.w. 386.26; wh. pr. m.p. 165.3; s. 95% al.

diethyl Carbitol. See ether, bis-ethoxyethyl.

diethyl carbonate. See carbonic acid, diethyl ester.

diethyl diphenyl urea. See urea, diethyl diphenyl-.

diethylenediamine. See piperazine.

diethylene dioxide. See p-dioxane.

diethylene disulfide. See p-dithiane.

diethylene glycol (2, 2′-oxydiethanol; 2, 2′-dihydroxyethyl ether). $O(CH_2CH_2OH)_2$; m.w. 106.08; col. liq.; m.p. −10.45; b.p. 244.5; s.w.; s.al.

diethylene glycol, diethyl ether. See ether, bis (β-ethoxyethyl).

diethylene glycol, dioleate. $(C_{17}H_{33}COOC_2H_4)_2O$; m.w. 634.58; pa. yel. liq.; s.al.

diethylene glycol, distearate (glycosterin). $(C_{17}H_{35}COOC_2H_4)_2O$; m.w. 638.61; wh. wax-like solid; m.p. 54-5; i.al.

diethylene glycol ethyl ether acetate. See diethylene glycol monoethyl ether acetate.

diethylene glycol, monobutyl ether (2-[β-butoxyethoxy] ethanol; butyl carbitol). $C_4H_9OCH_2CH_2OCH_2CH_2OH$; m.w. 162.14; col. liq.; b.p. 231.2; s.w.; s.al.

diethylene glycol, monobutyl ether acetate. $C_4H_9O(CH_2)_2O(CH_2)_2OOCCH_3$; m.w. 204.16; col. liq.; b.p. 245.

diethylene glycol, monoethyl ether (2-[β-ethoxyethoxy]-ethanol; carbitol). $C_2H_5OCH_2CH_2OCH_2CH_2OH$; m.w. 134.11; col. liq.; b.p. 201.9; s.w.; s.al.

diethylene glycol, monoethyl ether acetate. $C_2H_5O(CH_2)_2O(CH_2)_2OOCCH_3$; m.w. 176.12; col. liq.; b.p. 218; s.w.

diethylene glycol monoethyl ether acetate. $C_2H_5OCH_2CH_2OCH_2CH_2CO_2CH_3$; m.w. 176.13; colorl. liq.; sp.gr. 1.008-1.013; s.w.; solvent for cellulose esters, gums, and resins.

diethylene glycol monolaurate (acid). See lauric acid, diethylene glycol ester, mono-.

diethylene glycol, monomethyl ether (2-[β-methoxyethoxy] ethanol; methyl carbitol). $CH_3OCH_2CH_2OCH_2CH_2OH$; m.w. 120.09; col. liq.; b.p. 193.2; s.w.

diethylene oxide. See dioxane.

diethylene oxide 2-iminoethyl alcohol. See 4-morpholineethanol.

diethylene triamine. $NH_2CH_2CH_2NHCH_2CH_2NH_2$; m.w. 103; hygroscopic viscous liq.; sp.gr. .958; b.p. 207; s.w.; saponify acidic materials.

diethylenimide oxide. See morpholine.

diethyl ether. See ethyl ether.

diethyl ketone. See 3-pentanone.

diethyl malate. See malic acid, diethyl ester.

diethyl oxalate. See oxalic acid, diethyl ester.

diethylphosphoric acid (diethyl hydrogen phosphate). $PO(OC_2H_5)_2OH$; m.w. 154.11; liq.; b.p. 59; i.w.

diethyl phthalate. See phthalic acid, diethyl ester.

diethyl sulfate. See ethyl sulfate.

diethyl sulfite. See ethyl sulfite.

difference band. Spectral band appearing in change from an excited state, rather than from the ground state.

differential calculus. Branch of mathematics concerned with continuously varying quantities.

differential distillation (simple distillation). Distillation where vapor generated by a boiling liquid is withdrawn and condensed as quickly as it is formed.

differentiation (derivation). Process of determining the derived function.

diffraction. The deviation of a ray of light or an x-ray from a straight line on intercepting an edge.

diffraction grating. See grating.

diffusion. A process whereby the molecules of a solution which is not homogeneous gradually interpenetrate one another until homogeneity is reached. This process is rapid in gases, moderate in liquids, and extremely slow in solids.

diffusion layer. That portion of an electrolyte from the electrode to the point at which the concentration is equal to the bulk of the solution.

difurfuralamine (α, α′-di-2-furyldimethylamine). $(C_4H_3OCH_2)_2NH$; m.w. 177.09; col. liq.; b.p. 102-3 [1]; i.w.

digallic acid. See tannic acid.

m-digallic acid (gallic acid 3-monogallate). $C_{14}H_{10}O_9$; m.w. 322.08; need. $(+1H_2O)$ f.al. + w.

digest. To expose a substance to the solvent action of a liquid; to hydrolyse, as a protein or fat.

digitalis (foxglove). The dried leaves of digitalis purpurea, used in medicine.

diglycolamidic acid. See acetic acid, iminodi-.

diglycolic acid (oxydiethanoic acid; oxydiacetic acid). $O(CH_2COOH)_2$; m.w. 134.05; rhomb. or monocl. pr. $(+1H_2O)$ f.w.; m.p. 148; s.w.; s.al.

diglycolide. See glycolide.

diglycol laurate. $HO \cdot C_2H_4O \cdot C_2H_4 \cdot OOCH_{23}C_{11}$; sp.gr. 0.963-0.968; b.p. does not decompose at 250; used in mfr. cosmetics, metal polishes; paper and leather industries; mfr. dry cleaning soap.

diglycol oleate. See diethylene glycol, dioleate.

diglycol stearate. See diethylene glycol, distearate.

diglycolyl diamide. See glycine anhydride.

diguanide. See biguanide.

di-n-heptyl sulfate. See heptyl sulfate.

di-n-hexadecyl sulfate. See cetyl sulfate.

dihexyl. See dodecane.

di-n-hexyl sulfate. See hexyl sulfate.

dihydric alcohol (glycol). Alcohol containing two hydroxy groups, e.g $CH_2OH \cdot CH_2OH$.

diimide, dinaphthyl-. See azonaphthalene.

diimide, diphenyl-. See azobenzene.

diimide, dixenyl-. See azobiphenyl.

diimide, ethyl phenyl-. See benzeneazoethane.

diimide, methylphenyl-. See benzeneazomethane.

diimide, α-naphthyl-β-naphthyl-. See 1, 2′-azonaphthalene.

diisoamylamine (bis [γ-methylbutyl]-amine). $[(CH_3)_2CHCH_2CH_2]_2NH$; m.w. 157.19; col. liq.; m.p. −44; b.p. 190; s.w.; s.al.

diisoamyl sulfate. See isoamyl sulfate.

diisoamyl sulfide. See isoamyl sulfide.

diisobutylamine (bis [β-methylpropyl] amine). $[(CH_3)_2CHCH_2]_2NH$; m.w. 129.16; col. liq.; m.p. −70; b.p. 139-40; s.w.; s.al.

diisobutylene. $(CH_3)_2C{:}CHC(CH_3)_3$ or $CH_2{:}C(CH_3)CH_2C(CH_3)_3$; m.w. 112.-12; col. liq.; b.p. 102.6.

diisobutyl ketone. See 4-heptanone, 2, 6-dimethyl-.

diisobutyl sulfate. See isobutyl sulfate.

diisocrotyl. See 2, 4-hexadiene, 2, 5-dimethyl-.

diisopropylamine. $[(CH_3)_2CH]_2NH$; m.w. 101.13; col. liq.; b.p. 83-4; s.w.

diisopropylamine, N-nitroso- (diisopropylnitrosamine; nitrous diisopropylamide). $[(CH_3)_2CH]_2NNO$; m.w. 130.13; cr. f. et.; m.p. 46; b.p. 194.5; s.w.; s.al.

diketone, dimethyl. See 2, 3-butanedione.

diketone, diphenyl. See benzil.

α, γ-dilaurin. See glycerol, 1, 3-dilaurate.

Dilecto. Synthetic tar-acid resin.

dill oil. See oil, dill.

diluent. A liquid used to dilute or thin solutions by addition.

dilution law. See Ostwald's dilution law.

dilution ratio. Volume of diluent divided by volume of solvent; c.c. of diluent necessary to cause precipitation from 1 c.c. of nitrocellulose solution.

dimethylamine. $(CH_3)_2NH$; m.w. 45.06; col. liq. or gas; m.p. −96.0; b.p. 7.4; s.w.; s.al.

dimethylamine, α, α′-dicyano-. See acetonitrile, iminodi-.

dimethylamine, α, α′-di-2-furyl-. See difurfurylamine.

dimethylamine, dimethylthioithionocarbamate. See under carbamic acid, dimethylthioithiono-.

dimethylamine, hydrochloride (dimethylammonium chloride). $(CH_3)_2NH \cdot HCl$; m.w. 81.53; need. f.al.; m.p. 171; s.w.; s.al.

dimethylamine, N-nitro- (dimethylnitramine; nitric dimethylamide). $(CH_3)_2NNO_2$; m.w. 90.06; m.p. 57-8; b.p. 187; s.w.; s.al.

dimethylamine, N-nitroso- (dimethylnitrosamine; nitrous dimethylamide).

dimethylaniline. See aniline, N, N-dimethyl-.

dimethyl aniline fluosilicate. $(C_6H_5NHCH_3)_2H_2SiF_6$; m.w. 358.23; monocl. wh.; i.al.

dimethyl diphenyl urea. $(CH_3)_2(C_6H_5)_2CON_2$; wh. cryst.; m.p. 120; i.w., s.al.; used as a stabilizer for explosives.

dimethylenimine. See ethylenimine.

dimethyl ether. See methyl ether.

(α, α-dimethylethyl)-amine. See tert-butyl amine.

α, α-dimethylethyl nitrite. See tert-butyl nitrite.

dimethyl glyoxime. See glyoxime, dimethyl.

dimethyl phthalate. See phthalic acid, dimethyl ester.

α, α-dimethylpropyl. See tert-butyl.

dimethyl sulfate. See methyl sulfate.

dimethyl sulfite. See methyl sulfite.

dimethoxytetraethylene glycol. See glycol, dimethoxy tetraethylene-.

dimethoxy tetraglycol. See glycol, dimethoxy tetra-.

dimorphous. Capable of crystallising in two forms, e.g. sulfur, which forms rhombic and monoclinic crystals.

1, 2, 7, 8-dinaphthanthracene. See dibenzanthracene.

α-dinaphthol. See 4, 4′-bi-1-naphthol.

β-dinaphthol. See 1, 1′-bi-2-naphthol.

α, α′-dinaphthyl. See 1, 1′-binaphthyl.

di-2-naphthylamine. $C_{10}H_7NHC_{10}H_7$; m.w. 269.13; leaf. f.bz.; m.p. 171; b.p. 471; i.w.; s.al.

di-α-naphthylamine fluosilicate. $(C_{10}H_7NH_2)_2 \cdot H_2SiF_6$; m.w. 430.23; wh. need. m.p. 218; s. 95% al.

di-β-naphthylamine fluosilicate. $(C_{10}H_7NH_2)_2 \cdot H_2SiF_6$; m.w. 430.23; hex. wh.; m.p. 236.3; s. 95% al.

dineric. Solution of two immiscible solvents with a single solute soluble in each.

dineric interface (liquid/liquid interface). Boundary surface between two miscible liquids.

dinicotinic acid (3, 5-pyridinedicarbo acid). $C_5H_3N(COOH)_2$; m.w. 16 cr.; m.p. 323; s.w.

dinitraniline. See aniline, dinitro-.

di-m-nitraniline fluosilicate. (C $NH_2NO_2)_2 \cdot H_2SiF_6$; m.w. 42 rhomb. wh. pl.; m.p. 200; s. 95%

dinitrochlorbenzol (dinitrochlorbenz See benzene, chlorodinitro-.

dinitronaphthalene. See naphtha dinitro-.

dinitrophenol. See phenol, dinitro-.

dinitroresorcinol. See resorcinol, nitro-.

dinitrosodiphenylamine fluosilic $[(C_6H_5)_2N{-}NO]_2 \cdot H_2SiF_6$; m.w. 26; indigo cr.; m.p. 124.5; s. 95%

dinitrotoluol. See toluene, dinitro-.

di-n-nonyl sulfate. See nonyl sul

di-n-octadecyl sulfate. See octad sulfate.

di-n-octyl sulfate. See octyl sulfat

diode. Vacuum tube having two trodes.

diopside (malacolite, alalite). A min $CaMg(SiO_3)_2$; monocl., lt. to grn., col., gray, yel., rar. bl.; s 3.20-3.38; hardness 5-6.

dioptasite (dioptase). A mineral, H $CuO \cdot SiO_2$; trig., emer. grn.; s 3.05-3.35; hardness 5.

diopter (dioptry). Focal power equal to a focal length of 1 meter.

diolefin. Hydrocarbon that cont two double bonds.

-dione. Suffix denoting a diketone.

dionin. See morphine, ethyl-, hy chloride.

diopside. A natural silicate of calc and magnesium, $CaMg(SiO_3)_2$.

diorite. A granitoid rock comp essentially of hornblend and felds

dioxan. See p-dioxane.

m-dioxane (1, 3-dioxane; trimethy glycol methylene ether; trimethy methylene dioxide). $OCH_2OCH_2CH_2CH_2$; m.w. 88.06; col. liq.; b.p. 10 s.w.; s.al.

p-dioxane (1, 4-dioxane; diethy dioxide; glycol ethylene et $OCH_2CH_2OCH_2CH_2$; m.w. 88.06; liq.; m.p. 11.7; b.p. 101.5; s.w.;

2, 5-p-dioxanedione. See glycolide

2, 5-p-dioxanedione, 3, 6-dimet See lactide.

dioxide. Compound of the type N

dioxime. Compound containing oxime (NOH) groups.

dioxindole. See oxindole, 3-hydroxy

dioxolane. Cyclic acetal.

1, 3-dioxolane, 2-methyl- (ethy ethylidene ether; glycol ethyl diether). $OCH(CH_3)OCH_2CH_2$; 88.06; b.p. 82.5; s.w.

α, α-dipalmitin. See glycerol, 1 dipalmitate.

dip. Angle (in degrees), that a be rock is tilted from the horizo angle, in a vertical plane, bet direction of the earth's mag field and the horizontal.

dip angle. Angle formed by line magnetic force at any place horizon.

dipentene. See dl-limonene.

Dipex. A water-soluble sulfon mineral oil used as a wetting agent lubricant in the textile industry in the molding of rubber.

diphenic acid (2, 2′-biphenyldicarbo acid; 0, 0′-dibenzoic acid; 1, phenic acid). $(COOH)C_6H_4C$ COOH; m.w. 242.08; monocl. f.w.; m.p. 228-9; s.w.; s.al.

diphenic acid, diethyl ester (diphenate). $(C_6H_4COOC_2H_5)_2$; 298.14; m.p. 42.

diphenic acid, dimethyl ester (m diphenate). $(C_6H_4COOCH_3)_2$; 270.11; pr. f. me. al.; m.p. 74.

diphenic acid, 4, 4′, 5, 5′, 6, 6′-h hydroxy-, dilactone. See ellagic

enic acid, 3-nitro- (o-nitrodiphenic d). $COOHC_6H_3NO_2C_6H_4COOH$; w. 287.08; m.p. 248-50 d.

enic acid, 4-nitro- (m-nitrodiphenic d). $COOHC_6H_3NO_2C_6H_4COOH$; w. 287.08; m.p. 268.

enic acid, 5-nitro- (p-nitrodiphenic d). $COOHC_6H_3NO_2C_6H_4COOH$; 7.08; m.p. 214-6.

enic anhydride. $(C_6H_4CO)_2O$; m.w. 4.06; m.p. 219; i.w.

enimide. $(C_6H_4CO)_2NH$; 223.08; ed.; m.p. 217.5; i.w.; s.al.

enine. See hydrazobenzene, 4, -diamino-.

enoyl chloride (2, 2'-biphenyldirbonyl chloride). $(C_6H_4COCl)_2$; .w. 278.98; m.p. 94.

enoquinone, 3, 3', 5, 5'-tetra-ethoxy-. See cerulignone.

enyl. See biphenyl and correspondg derivatives.

enylamine (n-phenylaniline; anilinoenzene). $(C_6H_5)_2NH$; m.w. 169.09; ol. monocl. leaf.; m.p. 53; b.p. 302; al.

enyl, o-amino-. See o-biphenylmine.

henyl, p-amino. See xenyl amine.

henylamine, N-acetyl. See acetamide, N, N-diphenyl-.

henylamine, o-amino-. See o-phenylnediamine, N-phenyl-.

henylamine, p-amino-. See p-phenylnediamine, N-phenyl-.

henylamine, N-benzyl- (N, N-diphenylbenzylamine). $C_6H_5CH_2N(C_6H_5)_2$; m.w. 259.14; need.; n.p. 95; s.w.; s.al.

henylamine, p, p'-bisdimethylamino- (leuco base of Bindshedler green; tetramethyl-4, 4'-diaminodiphenylamine). $NH[C_6H_4N(CH_3)_2]_2$; m.w. 255.19; tetr. pl. f. CS_2; m.p. 119; s.w.; s.al.

henylamine, 4, 4'-diamino- (p, p'-iminodianiline). $NH_2C_6H_4NHC_6H_4NH_2$; m.w. 199.13; leaf. f.w.; m.p. 158; s.w.; s.al.

henylamine, 2, 4'-dinitro-. $NO_2C_6H_4NHC_6H_4NO_2$; m.w. 259.09; yelsh.-red need. f. bz.; m.p. 222; i.w.; s.al.

henylamine, 4, 4'-dinitro-. $NO_2C_6H_4NHC_6H_4NO_2$; m.w. 259.09; yel. need. f.al.; m.p. 216; i.w.; s.al.

henylamine, N-ethyl-. $(C_6H_5)_2NC_2H_5$; m.w. 197.13; liq.; b.p. 297; i.w.; s.al.

henylamine, N-formyl-. See formamide, N, N-diphenyl-.

henylamine, hydroxy-. See phenol, anilino-.

henylamine, N-methyl-. $(C_6H_5)_2NCH_3$; m.w. 183.11; col. liq.; m.p. −7.6; b.p. 293.4; i.w.; s.al.

henylamine, p-nitro-. $NO_2C_6H_4NHC_6H_5$; m.w. 214.09; yel. need.; m.p. 132; b.p. 211.0 [30]; i.w.; s.al.

henylamine, p-nitroso-. $NOC_6H_4NHC_6H_5$; m.w. 198.09; grn. pl. f. al. or bz.; m.p. 143; s.w.; s.al.

henylamine, N-nitroso- (diphenylnitrosamine; nitrous diphenylamide). $(C_6H_5)_2NNO$; m.w. 198.09; yel. monocl. pl. f. lgr.; m.p. 66.5; s.al.

henylamine, thio-. See phenothiazine.

henyl carbonate. See carbonic acid, diphenyl ester.

henyl, 4, 4'-dihydroxy, 3-3'-dimethyl-. See p, p'-biphenol-3, 3'-dimethyl-.

henyldiimide. See azobenzene.

henylene ketone oxide. See xanthone.

henylene oxide. See dibenzofuran.

henyl enimine. See carbazole.

henylguanidine. See guanidine, diphenyl.

henylimide. See carbazole.

henyline. 2, 4'-biphenyldiamine.

henylmethane. See methane, diphenyl-.

henylmethane α-carboxylic acid. See acetic acid, diphenyl-.

henyl phthalate. See phthalic acid, diphenyl ester.

diphosgene (trichloromethyl chloroformate; superpalite; perchloromethyl formate). $ClCOOCCl_3$; m.w. 197.83; col. liq.; m.p. −57; b.p. 127.5; i.w.; s.al.

dipicolinic acid (2, 6-pyridinedicarboxylic acid; α, α'-dipicolinic acid). $C_5H_3N(COOH)_2 \cdot 1\frac{1}{2}H_2O$; m.w. 194.07; col. need. $(+1\frac{1}{2}H_2O)$ f.w.; s.w.; s.al.

diplococcus. Two round cells with the adjacent surfaces somewhat flattened.

diplon. See deuteron.

diplumbane, hexaethyl-. See lead, hexaethyldi-.

diplumbic hexaethyl. See lead, hexaethyldi-.

dipole. See electric moment.

dipole moment. The product of the magnitude of the equal and opposite ionic charges and of the distance by which they are separated.

dipole polarization. Electric polarization of homogeneous polar dielectrics due to orientation of permanent molecular dipoles.

Dippel's oil. See oil, bone.

dipping acid. See sulfuric acid.

dipropargyl. See 1, 5-hexadiyne.

di-2-propenylamine. See diallylamine.

dipropylamine (di-n-propylamine). $(CH_3CH_2CH_2)_2NH$; m.w. 101.13; col. liq.; m.p. −39.6; b.p. 110.7; s.w.; s.al.

dipropylamine, N-nitroso- (dipropylnitrosamine; nitrous dipropylamide). $(CH_3CH_2CH_2)_2NNO$; m.w. 130.13; yel. liq.; b.p. 205; s.w.; s.al.

dipropylene. See 2, 4-hexadiene.

dipropylene glycol. $CH_3CHOHCH_2—O—CH_2CHOHCH_3$; sp.gr. 1.034-1.039 at 20/20° C.; b.p. 215-240; s.w.; solvent.

di-n-propyl sulfate. See propyl sulfate.

dipyridine. See nicotyrine.

dipyridyl. See bipyridyl.

5, 10-dipyrrolo [1, 2-a, 1, 2-d] pyrazinedione. See pyrocoll.

diquinolyl. See biquinoline.

Dirac equation. Formula giving mass absorption coefficient of a substance for radiation quanta expressed in terms of their energy and atomic constants.

Dirac function. A function which equals zero for all values of x other than zero. Its definite integral from $-\infty$ to $+\infty$ equals zero.

direct dye (salt color). A dye which colors cotton without the aid of a mordant.

disaccharide. Sugar which yields two molecules of simple sugars on hydrolysis, e.g. sucrose, lactose.

discharge, coefficient of. Actual discharge of a fluid divided by theoretical discharge.

discharge lake R. See 2-naphthol, 1-p-phenylazo-.

discharge tube. See vacuum tube.

discharging agent. A substance that can destroy a dye or mordant within the fibers of a textile; used to obtain various effects and designs.

Discolite (Formopon; Hydrosulfite A.W.; Rongalite C). $NaHSO_2 \cdot CH_2O \cdot 2H_2O$; textile printing reducing agent.

discordant polar system (crossed polar system). Compound in which two groups are present which tend to promote electromeric changes in opposed directions; they are unstable and highly reactive, e.g. malic acid.

disiloxane. Si_2H_6O; m.w. 78.17; col. gas; s.g. 0.881^{-80}; m.p. −144; b.p. −15.2; s.w.

disinfectant. Chemical agents used to destroy pathogenic microörganisms on inanimate bodies.

disintegrator. Machine for the grinding, granulating, etc. of materials.

disperse phase. Constituent of a disperse system corresponding to the dissolved substance in a solution.

disperse system. Colloidal solution whose two phases are separated by relatively large surfaces.

dispersing agent. An agent, compatible with the solvent, which holds very finely divided matter in a dispersed state in that solvent.

dispersion. The separation of an emission into components which usually are given different directions, e.g. a prism or grating dispersing white light.

dispersoid. Highly disperse colloidal suspension.

displacement. Chemical change in which one element enters a compound in place of another, the latter being set free.

displacement (or elongation) at any instant. Distance of a vibrating or oscillating particle from its position of equilibrium.

displacement, double. See decomposition, double.

displacement law. An atom from which an electron is removed behaves chemically like the preceding atom in the periodic table.

dissymmetry. A lack of symmetry.

distribution function. Indication of relative frequency with which any value of a statistical variable may be expected to appear in any certain period or space.

dissociation. The reversible decomposition of a substance wherein the products of decomposition and the original substance are in equilibrium; ionization.

α, γ-distearin. See glycerol, 1, 3-distearate.

distemper. Water paint made with pigments and size or adhesive substances.

disthene. See cyanite.

distillability. Probability or tendency to distill. Rate of distillation of a substance divided by its concentration.

distillation. The process of vaporizing a liquid and condensing the vapors by cooling.

distillation, A.S.T.M. See Engler distillation.

distillation, destructive. See destructive distillation.

distillation, differential. See differential distillation.

distillation, dry. See dry distillation.

distillation, Engler. See Engler distillation.

distillation, equilibrium. See equilibrium distillation.

distillation, flash. See equilibrium distillation.

distillation, intact. See intact distillation.

distillation, simple. See differential distillation.

distillation, steam. See steam distillation.

distinctness-of-image gloss. See gloss, distinctness-of-image.

Distoline. Commercial oleic acid derived from vegetable oils.

distraction circuit. Two caglim lamps in parallel with one another arranged so that the glowing of either inhibits the other.

distribution ratio (partition coefficient). Ratio in which a solute will divide itself when an immiscible solvent is added to its solution.

disulfide. Compound of the type MS_2, e.g. CS_2, carbon disulfide.

disulfide, bis (dibutylthiocarbamyl) (tetrabutylthiuram disulfide). $[(C_4H_9)_2NCS]_2S_2$; m.w. 408.54; yel. or. liq.; i.w.; s.al.

disulfide, bis(diethylthiocarbamyl) (tetraethylthiuram disulfide). $[(C_2H_5)_2NCS]_2S_2$; m.w. 296.41; yel. cr.; m.p. 70; i.w.; s.al.

disulfide, bis(dimethylthiocarbamyl) (tetramethylthiuram disulfide). $[(CH_3)_2NCS]_2S_2$; m.w. 240.35; yel. cr.; m.p. 72; i.w.; s.al.

disulfide, bis(ethylmethylthiocarbamyl) (diethyldimethylthiuram disulfide). $[(CH_3)C_2H_5NCS]_2S_2$; m.w. 268.38; yel. cr.; m.p. 72; i.w.; s.al.

disulfide, bis(1-piperidylthiocarbonyl) (dicyclopentamethylenethiuram disulfide). $(C_5H_{10}NCS)_2S_2$; m.w. 320.41; yel. cr.; m.p. 129-30; i.w.; s.al.

disulfide, bis(tetrabenzylthiocarbamyl) (tetrabenzylthiuramdisulfide). $[(C_6H_5CH_2)_2NCS]_2S_2$; m.w. 544.47; yel. cr.; m.p. 132-3; i.w.; s.al.

disulfide, diacetyl. See acetyl disulfide.

disulfide, 2, 2'-dibenzothiazyl-. See benzothiozole, 2, 2'-dithiobis-.

disulfide, dibenzoyl. See benzoyl disulfide.

disulfide, dibenzyl. See benzyl disulfide.

disulfide, diethyl. See ethyl disulfide.

disulfide, diisoamyl. See isoamyl disulfide.

disulfide, dimethyl. See methyl disulfide.

disulfide, diphenyl. See phenyl disulfide.

disulfide, diphenylene. See thiathrene.

ditaine. See echitamine.

ditan. See methane, diphenyl-.

ditan, α-methyl-. See ethane, 1, 1-diphenyl-.

di-n-tetradecyl sulfate. See tetradecyl sulfate.

p-dithiane (1, 4-dithiane; diethylene disulfide; tetrahydro-p-dithin). $SCH_2CH_2SCH_2CH_2$; m.w. 120.18; col. monocl. f.et.; m.p. 112; b.p. 200; s.w.; s.al.

1, 3, 5-dithiazine, 5, 6-dihydro-2, 4, 6-trimethyl-. See thialdine.

α, α-dithienyl. See 2, 2'-bithiophene.

α, α-dithienyl, perbromo-. See 2, 2'-bithiophene, hexabromo-.

p-dithiin, tetrahydro-. See di-p-thiane.

ditolan azotide. See amaron.

di-m-toluidine fluosilicate. $(C_6H_4NH_2CH_3)_2 \cdot H_2SiF_6$; m.w. 358.23; wh. rect. pr.; i.al.

di-o-toluidine fluosilicate. $(C_6H_4NH_2CH_3)_2 \cdot H_2SiF_6$; m.w. 358.23; rhomb. wh. i.al.

di-p-toluidine fluosilicate. $(C_6H_4NH_2CH_3)_2 \cdot H_2SiF_6$; m.w. 358.23; wh. need., unst.

m, m'-ditolyl. See m, m'-bitolyl.

di-m-tolylamine. $(CH_3C_6H_4)_2NH$; m.w. 197.13; liq.; m.p. <-12; b.p. 320; s.w.; s.al.

di-o-tolylamine. $(CH_3C_6H_4)_2NH$; m.w. 197.13; bl. cr.; m.p. 52-3; b.p. 313.4; s.w.

di-p-tolylamine. $(CH_3C_6H_4)_2NH$; m.w. 197.13; col. need. f. pet. eth.; m.p. 79; b.p. 330.5; s.w.

di-tolyldiimide. See azotoluene.

di-ortho-tolylguanidine. See guanidine, di-o-tolyl-.

diurea. See p-urazine.

diuretic. Substance which increases secretion of urine.

divalent. Having a valence of two.

divi-divi. The dried pods of a West Indian tree used in tanning.

divinyl. See 1, 3-butadiene.

docosane (n). $CH_3(CH_2)_{20}CH_3$; m.w. 310.36; cr.f.al.; m.p. 44.4; b.p. 317.4; i.w.

docosanoic acid. See behenic acid.

trans-13-docosenic acid. See brassinic acid.

cis-13-docosenoic acid. See erucic acid.

trans-13-docosenoic acid. See brassidic acid.

n-docosoic acid. See behenic acid.

13-docosynoic acid. See behenolic acid.

doctor. Scraping blade for removing all or excess material from a moving surface being coated.

doctor test. Very sensitive test for hydrogen sulfide and mercaptans in petroleum products.

doctor treatment. Process of refining petroleum with sodium plumbite solution to remove bad odors.

dodecanal. See lauraldehyde.

dodecane (n-dodecane; bihexyl; dihexyl). $CH_3(CH_2)_{10}CH_3$; m.w. 170.20; col. liq.; m.p. −12; b.p. 214.5; i.w.; s.al.

dodecane, 1-amino-. See dodecylamine.

dodecane, 1-bromo- (dodecyl bromide; lauryl bromide). $CH_3(CH_2)_{10}CH_2Br$; m.w. 249.11; liq.; b.p. 175-80 [40]; i.w.; s.al.

dodecanenitrile. See lauronitrile.

dodecanoic acid. See lauric acid.

1-dodecanol (*n*-dodecyl alcohol; lauryl alcohol). $CH_3(CH_2)_{11}OH$; m.w. 186.20; leaf. f.dil.al.; m.p. 22.6; b.p. 255; i.w.; s.al.

6-dodecanol (amylhexylcarbinol). $CH_3(CH_2)_4CHOH(CH_2)_5CH_3$; m.w. 186.20; cr.; m.p. 30; b.p. 119 °; s.al.

dodecanoyl chloride. See lauryl chloride.

1-dodecene (α-dodecylene). $C_{12}H_{24}$; m.w. 168.19; col. liq.; m.p. −31.5; b.p. 213-5; i.w.; s.al.

n-dodecyl alcohol. See 1-dodecanol.

dodecylamine (pri-n-dodecylamine; 1-aminododecane). $CH_3(CH_2)_{11}NH_2$; m.w. 185.22; m.p. 27-8; b.p. 247-9.

α-dodecylene. See 1-dodecene.

dodecyl sulfate (di-n-dodecyl sulfate). $[CH_3(CH_2)_{11}]_2SO_4$; m.w. 434.45; m.p. 48.4-8.5.

dog button. See nux vomica.

dog-fish oil. See oil, shark.

dolomite (pearl spar). A mineral, $CaCO_3 \cdot MgCO_3$; hex. (trig. rhbdr.), wh., yel., redsh., br., blk., rar. col.; sp.gr. 2.80-2.99; hardness 3.5-4.5; used to make refractory products.

doma. Early crystalline form of two planes forming a dihedral angle which is bisected by another plane.

Donath test. Test for determining rosin in waxes.

dope. A solution or varnish containing cellulose compounds, used in the aeroplane industry.

Doppler effect. Change in observed frequency of a wave because of relative motion of source or observer.

Doré. Bullion of gold and silver containing other metallic impurities.

dormant spray. Agricultural insecticidal spray applied during winter or early spring when plant is dormant.

Dorn effect (sedimentation potential). Potential difference created by a particle falling thru a liquid.

dot product. See scalar product.

dotriacontane (n-dotriacontane). $CH_3(CH_2)_{30}CH_3$; m.w. 450.51; cr. pl. f.et.; m.p. 74-5; b.p. 310 [15]; s.al.

double bond. A symbolism for the expression of a degree of unsaturation between two carbon atoms in organic compounds. Thus the simplest unsaturated organic compound, ethylene, $H_2C{=}CH_2$, is represented with a double bond between the carbons.

double decomposition. See decomposition, double.

double displacement. See decomposition, double.

double manure salt. A potash salt containing not less than 25% of potash, nor less than 25% of magnesium sulfate, and not more than 2.5% of chlorine.

double replacement. See decomposition, double.

double salt. Crystal formed when solutions of two different salts are mixed in equivalent proportions and then evaporated.

double superphosphate. See superphosphate, double.

doublet. Idea limiting case of an electric dipole of two equal opposite charges whose distance is diminished and charges increased so as to hold the electric moment finite and constant.

Doucil. The proprietary name for an aluminum silicate water-softening substance of the base-exchanging type.

douglas-fir oil. See oil, pine needle.

douglasite. A mineral, $2KCl \cdot FeCl_2 \cdot 2H_2O$; sp.gr. 2.16.

Dover's powder. A mixture of ipecac, opium, and milk sugar used in medicine as a sedative.

Dow metal. An alloy containing about 90% magnesium, and in addition, variably, aluminum, copper, cadmium, manganese and zinc. This metal is employed where lightness is the primary consideration, as in airplane construction.

Dowicide A. Sodium o-phenylphenate; yel. fl.; s.w. antiseptic; germicide; fungicide (water soluble).

Dowicide B. Sodium 2-4-5 trichlorphenate; yel. fl.; s.w.; germicide; antiseptic; fungicide (water soluble).

Dowicide C. Sodium chloro-o-phenyl phenate; antiseptic; germicide; fungicide (water soluble).

Dowicide F. Sodium tetrachlorphenate; br. cry.; s.w.; germicide; antiseptic; fungicide (water soluble).

Dowicide 1. O-phenylphenol; wh. fl.; s.al.; i.w; germicide; antiseptic; fungicide (oil soluble).

Dowicide 2. 2-4-5-trichlorphenol; wh. fl.; i.w.; s.al.; germicide; antiseptic; fungicide (oil soluble).

Dowicide 3. Chloro-o-phenylphenol; wh. liq.; i.w.; s.al.; antiseptic; germicide; fungicide (oil soluble).

Dowicide 5. Bromparaphenylphenol; yel. cry.; i.w.; s.al.; germicide.

Dowicide 6. Tetrachlorophenol; br. cry.; i.w.; s.al.; germicide; antiseptic; fungicide (oil soluble).

Dowicide 7. Pentachlorophenol; antiseptic; germicide; fungicide (oil soluble).

Dowtherm. One of a series of mixtures of diphenyl and diphenyl oxide used in heat transfer.

drachm (ℨ). One eighth of an ounce (Apothecary).

dragon's blood. A red resin obtained from certain palm trees and used in lacquers, varnishes, paints, pharmaceuticals, colored papers, polishes, photoengraving, etc.

dram (dr.). Unit of wt. .5644 Avoirdupois drams and .2572 apothecary drams are equivalent to one gram.

drawing. See tempering.

Dreft. A sodium lauryl sulfate used in the laundry for the washing of fine fabrics and woolens.

drenching. Method of fermentation, to remove lime and prepare skin for tanning.

Drene. A sodium lauryl sulfate used for shampoo purposes.

drier. Metallic-oxide or organic compound that catalyzes the oxidation or drying of drying oils, e.g. cobalt linoleate.

drier, coach (drier, heavy Japan). Drier and varnish resin dissolved in oil.

drier, heavy Japan. See drier, coach.

drier, oil. Drier (q.v.) dissolved in an oil.

Drierite. Anhydrous calcium sulfate used as dessicant.

drift speed. Mean speed of constantly colliding electrons or ions.

drip-point. Temperature at which the first drop of distillate falls from the end of the condenser.

drop black. Bone-black which is washed and ground and used in the paint and enamel industries.

drop weight method. Method of measuring the surface tension of a liquid from the weight of a drop formed slowly and allowed to drop from a tip, ground plane, and with a circular edge.

drug. A substance used in the preparation of medicines, generally organic and having a special marked physiological action, e.g. narcotics, aspirin, etc.

drugs, crude. Vegetable products such as herbs, roots etc. Used in pharmacy, e.g. ginger.

dry bone. See smithsonite.

dry bulb temperature. Temperature of air as indicated by a standard thermometer, as contrasted with wet bulb temperature which is dependent upon atmospheric humidity.

specific heat by the atomic weight is a constant, about 6.4.

Dulux. Synthetic alkyd resin.

dunt. See stunt.

Duolith. See Cryptone.

duotal. See guaiacol carbonate.

Duponol. A series of long-chain alcohol sulfates used as wetting, emulsifying and softening agent and detergent in the leather, textile, paper and felt cleaning industries; same as Gardinol.

Duponol LS. Sodium oleyl sulfate.

Duponol ME. Brand of sodium lauryl sulfate purified free from electrolytes.

Duponol WA. Mixture of sodium salt of sulfated technical lauryl alcohol and lauryl alcohol.

Duprene (Neoprene). A name for chloroprene; an artificial rubber quite resistant to oils.

Dura. Synthetic phenolic resin.

Duralumin. An alloy containing 90% aluminum and 0.5% magnesium.

duranthrene color. Fast color derived from anthraquinone.

Duraplex E-71. A pure alkyd resin used in printing ink vehicles and for general use in the ink field.

durene (1, 2, 4, 5-tetramethylbenzene). $(CH_3)_4C_6H_2$; m.w. 134.11; col. monocl. leaf.; m.p. 80; i.w.; s.al.

Durez. A phenol-formaldehyde resin, thermosetting, obtainable in varnishes and powder form, colored and opaque; excellent resistance to esters, hydrocarbons and oils.

duriron. An alloy of iron (84) and silicon (16) which is resistant to the action of concentrated sulfuric acid.

Durite. Phenol-formaldehyde resin.

durra-sorgho. See sorghum.

durylic acid (2, 4, 5-trimethylbenzoic acid; cumylic acid). $(CH_3)_3C_6H_2COOH$; m.w. 164.09; col. need. f.bz.; m.p. 149.5; s.w.; s.al.

dust. Particles of solid matter 1-150 microns in size.

Dutch drops. See Haarlem oil.

Dutch metal. An alloy of copper and zinc used as a cheap imitation of gold leaf.

Durax. Synthetic tar-acid resin.

Durophen. Synthetic tar-acid resin.

dry cleaning. The process of removing dirt, grease, etc. from fabrics by the use of solvents other than water.

dry color. Pigment.

dry distillation. Heating in absence of air to decompose a substance and drive off volatile products.

dry ice. Carbon dioxide in the solid form.

dry-point. Temperature at which the liquid just disappears from the bottom of the flask.

dry steam. Saturated steam free from moisture.

drying oil. Oil which on exposure to air absorbs oxygen, gains in weight and dries to hard elastic films, e.g. linseed oil.

drying oven. A heating chamber for drying chemicals at a controlled temperature, also for drying apparatus.

drying tube. Tubes of various shapes packed with small lumps of calcium chloride; used to dry gases.

dual emulsions. See emulsions, dual.

Duane-Hunt law (D.-H. relation). Maximum frequency in a beam of x-rays issuing from a tube multiplied by the Planck constant equals the energy acquired by one of the cathode electrons in traversing the tube.

Dubbin. A mixture of oil and fat for currying (stuffing) leather.

duboisine. See hyoscyamine.

Duco. A proprietary name for a lacquer of the cellulose nitrate solution type.

ductility. Ability to be drawn into a wire, a property of metals.

Duhring's rule. If the temperatures at which two substances exert equal pressures are plotted against each other, the points form an approximately straight line.

dulcin. See urea, p-phenetyl-.

dulcite. See dulcitol.

dulcitol (1, 2, 3, 4, 5, 6-hexanehexol [one form]; dulcite; melampyrin). $(OH)_6$; m.w. 182.11; col. mon… m.p. 188; b.p. 295 [3.5].

Dulong and Petit's Law. F… elements in the solid state, e… the metals, the atoms have th… thermal capacity. The produc…

Duralid. Synthetic alkyd resin.

Duxol. Synthetic alkyd resin.

dyad. Element having a valence …

dye, direct. See direct dye.

dyeing assistant. Compound u… facilitate the dyeing process.

dye, mordant. Dye that can be f… fibers only by the aid of a m… (q.v.).

dye number. Proportionality … which is a measure of the true in… protective power of a stable …

dye, spirit soluble. See spirit … dye.

dyestuff. Colored substance capa… imparting its color to anim… vegetable fibers when prepared … suitable bath.

dynamic allotropy. Two allo… existing in equilibrium.

dynamic isomerism. Cases of rev… isomeric change in materials of … degree of purity.

dynamics. Branch of physics con… with forces that produce motion …

dynamite. Nitroglycerin compo… with a diatomaceous earth su… kieselguhr.

dynamite gelatin. A dynamite ma… gelatinizing the nitroglycerin … collodion cotton before the addit… the absorbent.

dynamo. Machine for converting … chanical energy into electrical e…

dynamometer. Instrument for m… ing force or power.

dynatron. Triode having such gri… plate potentials that the plate c… decreases as the plate potentia… creases.

dyne. The force which, acting u… mass of 1 gram, produces an acc… tion of 1 centimeter per secon… second.

dysanalite. A mineral, CaO·FeO·… etc.; cub., iron blk.; sp.gr. 4.02… sp.gr. 4.02-4.26; hardness 5-6.

dyscrasite. A mineral of silver … antimony used as a source for … metals.

dysprosium. Dy; m.w. 162.46, a m… element; a member of the e… family of the rare earths. The … element has never been isolated.

dysprosium acetate. $Dy(C_2H_3O_2)_3 \cdot 4H_2O$; m.w. 411.59; yel. need.; m… 120; s.w.; s.al.

dysprosium bromate. $Dy(BrO_3)_3 \cdot 9$… m.w. 708.35; yel. hex. need.; m.p… b.p. $-6H_2O$ 110; s.w.; s.al.

dysprosium carbonate. $Dy_2(CO_3)_3 \cdot 4H_2O$; m.w. 576.98; m.p. $-3H_2O$… i.w.

dysprosium chloride. $DyCl_3$; … 268.83; shining yel.pl.; s.g. 3.67°… 680.

dysprosium chromate. $Dy_2(CrO_4)_3 \cdot 10H_2O$; m.w. 853.11; yel. cr.; … $-3\frac{1}{2}H_2O$ 150.

dysprosium nitrate. $Dy(NO_3)_3 \cdot 5$… m.w. 438.56; yel. cryst.; m.p. … s.w.

dysprosium oxalate. $Dy_2(C_2O_4)_3 \cdot 10H_2O$; m.w. 769.08; pr.; i.w.

dysprosium oxide. Dy_2O_3; m.w. 37… wh. powd.; s.g. 7.81 [27].

dysprosium phosphate, ortho-. $DyPO_4 \cdot 5H_2O$; m.w. 347.56; yel.; m.p. … 200; i.w.

dysprosium selenate. $Dy_2(SeO_4)_3 \cdot 8$… m.w. 898.64; yel. need.; m.p. … 200; s.w.; i.al.

dysprosium sulfate. $Dy_2(SO_4)_3 \cdot 8$… m.w. 757.22; brill. yel. cr.; … $-8H_2O$, 360; s.w.

dystectic mixture. A mixture of t… more substances of definite propor… having a constant maximum me… point.

E

e mounting. Concave gratings ounted so that angles of incidence d diffraction are almost equal.

shaw theorem. An electric charge nnot be in a state of stable equi-rium, in an electrical field, unless ted on by non-field forces.

h color. Pigment of mineral origin, g. red iron oxide.

h oil. See petroleum.

hnut oil. See oil, peanut.

t India, gum. See gum, East India.

de Javelle. See Javelle water.

rhard effect. The photographic ensity of one area is influenced by iat of a closely adjacent area.

nite. Rubber which has been vul-anized with a greater amount of ulfur to give a hard brittle black roduct.

llioscope (ebulliscope). A device sed to determine concentration by neans of boiling-points of liquids.

llition. Boiling.

entricity. Deviation between centers f two circles from each other.

onidine. See dl-anhydroecgonine.

cgonine (tropinecarboxylic acid). $C_9H_{15}NO_3 \cdot H_2O$; m.w. 203.14; col. nonocl. pr. f.al.; m.p. 198, anh. 205; .w.

gonine, benzoyl. $C_{16}H_{19}NO_4 \cdot 4H_2O$; n.w. 361.22; lust. need. f.w.; m.p. 0-2; anh. 193-5; s.w.; s.al.

gonine, benzoyl methyl-. See cocaine.

cgonine, hydrochloride. $C_9H_{15}NO_3 \cdot \cdot HCl$; m.w. 221.59; rhomb. or tricl. ab.; s.w.; s.al.

helon. Diffraction grating for producing spectra of very high order and dispersion.

nitamine (ditaine). $C_{22}H_{18}N_2O_4 \cdot \cdot 4H_2O$; m.w. 456.30; col. cr.; s.w.; s.al.

nitin. $C_{32}H_{52}O_2$; m.w. 468.41; leaf.; m.p. 170.

onomizer. Arrangement for utilising part of waste heat of boiler flue gases.

leleanu extract. Portion of petroleum oil extracted by treatment with liquid sulfur dioxide.

leleanu process. Removal of objectionable aromatic compounds from petroleum by treatment with sulfur dioxide at a low temperature.

dy current. Induced electric currents which lower efficiency and increase temperature of rotating metallic objects in a magnetic field.

dy current loss. Portion of core loss due to currents circulating in a magnetic material because of e.m.f. induced by a varying induction.

ge effect. Effect produced by an electric field because of charge on sharp edge at end of a conductor.

ible oil. See oil, edible.

luct. A product obtained by the splitting up of a more complex substance.

fective charge. Product, of actual distance between two atoms of a heteropolar, diatomic molecule and such an electric charge, that equals the actual dipole moment.

fective conductance. Ratio of energy component of a current to total voltage in an alternating current circuit.

fective nuclear charge. The excessive positive charge on the nucleus of an atom; the difference between the positive and negative charges on the nucleus.

effervescence. The escape of gas from a liquid or a mixture.

efficiency. Ratio of the work done by a machine to the work done upon it.

efficiency of a source of light. The ratio of the total luminous flux to the power consumed; in case of electric lamps expressed as lumens per watt.

efflorescence. Loss of water by a hydrated salt to form a lower hydrate or anhydrous salt. A coating—usually white—which appears on stored bricks or upon bricks laid in a wall.

effluent. Cast-off liquid of many industries and processes, e.g. tannery waste; viscose, sewage, and sugar effluents.

egg albumin. See albumin, egg.

egg yolk. The yellow of the eggs of hens, ducks and geese used in food products, pharmaceuticals, perfumery, tanning, etc.; sp.gr. 0.952; m.p. 22-22.5; solidification point 8-10.

egg yolk oil. See oil, egg yolk.

eglantine. See α-toluic acid, isobutyl ester.

eglestonite. A mineral, Hg_4Cl_2O; cub., brnsh., yel., blk. on expos.; sp.gr. 8.327; hardness 2-3.

Egyptian privet. See henna.

eicosane (n-eicosane). $CH_3(CH_2)_{18}CH_3$; m.w. 282.33; cr.; m.p. 38; b.p. 205 [15]; i.w.

eicosanoic acid. See arachidic acid.

1-eicosanol (pri-n-eicosyl alcohol; arachic alcohol). $CH_3(CH_2)_{18}CH_2OH$; m.w. 298.33; wh. waxy mass.; m.p. 71; b.p. 220 [3]; i.w.; s.al.

n-eicosoic acid. See arachidic acid.

pri-n-eicosyl alcohol. See 1-eicosanol.

eigen energy. Quantity of energy equivalent to an actual atomic state; see also, proper energy.

eikonogen. See 2-naphthol-6-sulfonic acid, 1-amino-, sodium salt.

Einstein coefficients. Factor showing probabilities of emission or absorption of radiation quanta by an atom in a definite time.

Einstein-de Haas effect. Angular momentum imparted to a free body by sudden magnetization.

Einstein law of photochemical equivalence. Each single molecule requires one quantum of energy for decomposition by radiation to occur.

Einstein shift. Slight reduction of frequency and shifting toward the red of spectral lines of light coming out of a strong gravitational field.

Einstein space. N-dimensional Riemannian space whose mean curvature is a constant at each point.

Einstein theory. See relativity.

eka. The Sanscrit numeral one.

El-Sixty. An amino thiazole powder; a rubber accelerator.

elaeolite. See nephelite.

elaeostearic acid. See eleostearic acid.

elaetite. See nepheline.

elaidic acid (trans-9-octadecenoic acid). $C_8H_{17}CH:CH(CH_2)_7COOH$; m.w. 282.27; col. leaf. f.al.; m.p. 51.5; b.p. 288 [100]; i.w.; s.al.

elaidic acid, dibromide (o, i-dibromostearic acid [one form]). $C_{17}H_{33}Br_2COOH$; m.w. 442.10; m.p. 27; i.w.; i.al.

elaidic acid, ethyl ester. $C_{17}H_{33}COOC_2H_5$; m.w. 310.30; oil; b.p. 217-8.5 [15]; i.w.; s.al.

elaidic acid, methyl ester. $C_{17}H_{33}COOCH_3$; m.w. 296.28; liq.; b.p. 213.5 [15]; i.w.; s.al.

elastic constant. Number of pounds required to deflect a system one inch.

elastic failure. Permanent distortion produced by a load.

elastic limit. Point at which any increment of stress produces permanent strain.

elastic resilience. Energy recovered or work done by an elastic body when a deforming stress is removed at the elastic limit.

elastic scattering. Scattering by impact, without loss of kinetic energy.

elasticity. Property by virtue of which a body reverts to its normal bulk or shape after deformation by an applied force.

elastin. Protein in the form of yellow elastic fibers interlacing outer layers of the skin.

Elastolith. Synthetic tar-acid resin.

elastomer. Rubber-like substance without reference to the composition of the material.

elastoplastic. Rubber-like plastic such as plasticized vinyl chloride, certain polyacrylic esters, etc.

elastoprene. Rubber-like substance of the diene polymer class.

β-elaterin. $C_{20}H_{28}O_5$; m.w. 348.22; hex. pl.; m.p. 195; i.w.; s.al.

elaterite. See mineral rubber.

electret. Permanently electrified product produced by allowing a molten wax or resin to solidify in an electrical field.

electric double refraction. See Kerr effect.

electric doublet. See electric moment.

electric eye. An electrical device which may produce or modify an electric current when light shines upon it, e.g. photovoltaic cell or photoconductive cell.

electric field intensity. Force exerted on unit charge at a given point in an electric field.

electric moment. When two charges (+e & −e) equal in size but opposite in sign are separated by a very small distance (d) they form an electric doublet or dipole, the magnitude of which is measured by its electric moment (m = ed).

electrical dipole moment. Product of the magnitude of the equal and opposite ionic charges and of the distance by which they are separated.

electrical double layer. Phenomena at interface consisting of the charge on the surface of a metal and an equal charge of opposite sign facing it in the solution when the metal and its solution are not initially in equilibrium.

electrical duplet. See induced dipole.

electrical endosmosis. Process wherein a liquid is forced thru a porous diaphragm by an electric current.

electro-dialysis. Dialysis under the influence of direct current electricity.

electro-deposition. The deposition of metals from various solutions on to other metals by means of electrolysis.

electro-osmosis. Movement of liquid thru a semi-permeable membrane where particles of a colloidal solution are restrained from movement.

electro-refining. Process of refining metals where the impure metal is made the anode in a suitable electrolyte. The pure metal is recovered at the cathode.

electro-rubbing. Process of metal plating by wrapping the anode with a cloth saturated with plating solution and rubbing it on object to be plated as the cathode.

electrocapillary phenomena. Electrical effects caused by changes in surface tension.

electrochemical equivalent. The number of grams of a substance set free by the passage of 1 coulomb of electricity thru an electrolyte.

electrochemistry. Branch of chemistry concerned with the application of electrical current or electric (or magnetic) fields in chemical processes and thru the measurement of electric currents or electrical potentials flowing thru or generated by chemical cells.

electrode. A conductor by which the current enters or leaves an electrolytic system.

electrode, calomel. See standard electrode.

electrode, standard. See standard electrode.

electrokinetic potential. (ζ) Electric potential at interfaces measured tangentially to the interface.

electrolysis. The process of passing an electric current thru a conducting solution involving the discharge of positive and negative ions at their respective electrodes with a resulting chemical change.

electrolysis; laws of. (1) For equal quantities of electricity, the amount of decomposition is constant or the amount of decomposition caused in electrolysis is proportional to the quantity of current passed (coulombs). (2) For the same quantities of electricity passed thru different solutions, the amount of decomposition is proportional to the equivalent of the element or group deposited.

electrolyte. Substance that will conduct an electric current either in the molten state or in solution, e.g. sodium chloride.

electrolyte, colloidal. Salt in which one kind of ion aggregates to form micelles by association of ions into groups which are heavily charged, heavily hydrated, and exhibit equivalent conductivity to that of a true ion.

electrolytic. Pertaining to electricity, e.g. electrolytic copper that which is produced by plating with electric current; electrolytic cell; etc.

electrolytic cell. Any apparatus containing two electrodes immersed or in contact with an electrolyte.

electrolytic valve. Electrode which permits passage of a current in one direction only, used as rectifiers, e.g. aluminum.

electromagnetic units (e.m.u.). A system based on the magnetic force due to a current.

electromeric change. The process of consecutive electron displacement; the polar activation process or the bond shifting process.

electrometer tube. A high vacuum amplifier with exceptionally low grid current.

electromotive series. Arrangement of elements in accordance with their

electrode potentials, the most active chemical elements taking position at the top.

electron. Tiny unit particle, or unit charge, of negative electricity having a mass of about $\frac{1}{1838}$th of an hydrogen atom.

electron affinity. Tendency of atom or molecule to acquire free electrons, forming negative ions.

electron attraction. Strong pull exerted by an atom or radical on the shared electron pair joining it to some other atom.

electron band. Molecular spectrum band brought about by electron changes within the molecule.

electron, Compton. See Compton electron.

electron concentration. Ratio of valency electrons to atoms.

electron, conduction. See conduction electron.

electron, free. See free electron.

electron lens. Electrical field which focuses a stream of electrons.

electron, positive. See positron.

electron, recoil. See Compton electron.

electron, secondary. See secondary electron.

electron-volt. Energy acquired by an electron in crossing a potential difference of one volt, 1.6×10^{-12} ergs.

electron wave. See de Broglie wave.

electronic band spectra. Molecular spectra occurring in ultraviolet or visible regions of spectrum, studied by absorption or emission.

electronic charge. See elementary charge.

electronics. Division of physical science concerned with electrons and their behavior; study of and application of electronic vacuum-tubes.

electronogen. Molecule or molecular group that emits electrons when exposed to light.

electrons, equivalent. See equivalent electrons.

electrophoresis. Migration of suspended solid, liquid or gaseous colloidal particles under the influence of an external e.m.f.

electrophoretic force. Additional force exerted on a solvent, in an opposite direction, by an electric force in an ionized solution.

electroscopometer. Photoelectric instrument for measuring transmissions or absorptions of light by colored and turbid media.

electrostatic units (e.s.u.). A system based on the forces between two electric charges.

electrostatics. Frictional electricity; electricity at rest.

electrostriction. Decrease of pressure or volume when a gas enters an electric field; effect of free ions upon each other; deformation of a dielectric subjected to an electric field.

electrovalency. A number which states how many electrons an atom has lost or gained, positive when the atom has formed a positive ion and negative when it has formed a negative ion; a polar bond.

electrum. A natural alloy of gold and silver.

element. A substance which cannot be decomposed by man into simpler elements.

element convertible resin. A resin which becomes infusible thru the action of certain elements such as oxygen or sulfur, e.g. Glyptal resins.

element, trace. Element present in amount of less than 0.01%.

elementary charge (electronic charge). Natural unit or quantum into which electric charges seem to be subdivided, 4.77×10^{-10} e.s.u.; 1.59×10^{-19} e.m.u.

elements, transition. See transition elements

elemi gum. See gum, elemi.

Elemite. A combination of sulfonated oils and solvents used as a wetting agent and detergent in the cleaning industry.

eleomargaric acid (9, 13-octadecadienoic acid [?]). $C_{17}H_{31}COOH$; m.w. 280.25; rhomb. pl.; m.p. 48; s.al.

α-eleostearic acid (9, 12-octadecadienoic acid [one form]). $C_{17}H_{31}COOH$; m.w. 280.25; leaf. or need. f.al.; m.p. 48-9; i.w.; s.al.

β-eleostearic acid (9, 12-octadecadienoic acid [one form]). $C_{17}H_{31}COOH$; m.w. 280.25; pl. or need. f.al.; m.p. 72; i.w.; s.al.

elixir. Sweetened preparation containing small amounts of medicinal substances.

ellagic acid (4, 4′, 5, 5′, 6, 6′-hexahydroxydiphenic acid dilactone). $C_{14}H_6O_8 \cdot 2H_2O$; m.w. 338.08; yel. cr.; s.w.

ellipse. A plane curve, the sum of the distance from any point on it from two fixed points (foci) being a constant.

ellipsoid. A solid body of which all plane sections are ellipses or circles.

ellipsoid, strain. See strain ellipsoid.

Elo. A synthetic tar-acid resin used for molding and laminating.

elon. See phenol, p-methylamino-, sulfate.

elongation. Percentage elongation, after fracture, based on original gauge length, in a test bar of standard dimensions.

elongation at any instant. See displacement at any instant.

elongation, relative. Increase in length of a bar, under stress, divided by its original length.

Eloxal (Alumilite) process. Process of oxidizing aluminum electrolytically.

elutriation. The separation of lighter from heavier particles of a powder by washing and decantation.

emagram. Diagram of linear temperature scale plotted against logarithmic pressure scale, used for determining geopotential difference for dry air.

emanation. Wave or electronic or gaseous product radiated from a substance.

embedability. The property of a bearing that permits the embedding in it of small particles of dirt.

embolite. A mineral, Ag(Br, Cl); grayish grn. to yelsh. grn., yel.; sp.gr. 5.31-5.81; hardness 1-1.5.

embossing. A process of pressing a pattern on cloth, paper or leather to give a raised or grain effect.

emerald. A green beryl (q.v.) mineral, the green color being due to the presence of chromium.

emerald green. A name applied to the two green pigments: copper acetoarsenite and chromium hydroxide.

emeraude green. See Guignet green.

emery. A mixture of corundum, magnetite, hematite, quartz and spinel; dk. gray to blk.; sp.gr. 3.75-4.31; hardness 7-9; a natural abrasive.

emery, powdered. Dark crystalline alundum used as an abrasive in grinding and polishing.

emetine. $C_{30}H_{40}N_2O_4$; m.w. 508.33; pl. f.al. or et.; m.p. 74; s.al.

emetine, hydrochloride(d). $C_{29}H_{40}N_2O_4 \cdot 2HCl \cdot 7H_2O$; m.w. 679.37; need. f.h.w.; m.p. 235-55; s.w.; s.al.

emission, autoelectronic. See field emission.

emission, cold. See field emission.

emission, field. See field emission.

emissivity. Ratio of emissive power of a surface to that of a black body.

emmenagogue. Drug that restores menstrual functions.

emodin (1, 3, 8-trihydroxy-6-methylanthraquinone; rheum emodin; frangula emodin). $CH_3C_{14}H_4O_2(OH)_3$; m.w. 270.08; or.-red monocl. need. f.ac.a.; m.p. 253; i.w.; s.al.

empirical. Derived by practical or trial and error methods rather than by theoretical consideration; relating to or derived from experiment.

empirical formula. One based on actual and not on theoretical composition or performance.

Emulphor. Condensation product of ethylene oxide and an organic acid.

Emulsamin. $(C_{10}H_{19}OCO)_2NCH_2 \cdot CH_2N(C_2H_5)_2$. A menthol-diurethane; emulsifying, wetting, and detergent properties.

emulsification. Art or practice of dispersing a given liquid as more or less permanent globules in another liquid medium.

emulsifier. A substance used to produce an emulsion of two liquids which do not naturally mix.

emulsion. A mechanical mixture of two liquids which do not naturally mix.

emulsion, loose. Emulsion which can be broken easily.

emulsion, multiple. An emulsion in which the dispersed phase contains globules of the continuous phase.

emulsion, oil-in-water. An emulsion where external phase is water and the internal is oil.

emulsion, tight. Emulsion which cannot be broken easily.

emulsion, water-in-oil. Emulsion in which the water is the internal phase and the oil is the external phase.

emulsions, dual. Emulsions of same pair of liquids with same emulsifying agent but of opposite types, e.g. water in oil and oil in water; emulsions in which disperse and continuous phases are interchanged.

emulsoid (hydrophile). Colloidal particles which take up water.

enamel. An opaque, fusible glass.

enanthaldehyde (heptanal; enanthal; heptyl aldehyde; enanthole; n-heptaldehyde). $CH_3(CH_2)_5CHO$; m.w. 114.11; col. liq.; m.p. −45; b.p. 155; s.w.; s.al.

enanthaldehyde, oxime (heptanal oxime; enanthaldoxime; n-heptaldoxime). $CH_3(CH_2)_5CH{:}NOH$; m.w. 129.13; large pl. f. al.; m.p. 55.5; b.p. 195; s.w.; s.al.

enanthic acid (heptanoic acid; enanthylic acid; oenanthic acid; n-heptoic acid; n-heptylic acid). $CH_3(CH_2)_5COOH$; m.w. 130.11; col. oily liq.; m.p. −10; b.p. 223.5; s.al.

enanthic acid, ethyl ester (ethyl heptanoate). $CH_3(CH_2)_5COOC_2H_5$; m.w. 158.14; col. liq.; b.p. 187.1; i.w.; s.al.

enanthic acid, heptyl ester (n-heptyl n-heptylate). $CH_3(CH_2)_5COOC_7H_{15}$; m.w. 228.22; col. liq.; b.p. 273-4^{764}; i.w.; s.al.

enanthic acid, methyl ester (methyl heptanoate). $CH_3(CH_2)_5COOCH_3$; m.w. 144.12; liq.; b.p. 172.1.

enanthic acid, p-phenylphenacyl ester. $CH_3(CH_2)_5COOCH_2COC_6H_4C_6H_5$; m.w. 324.19; m.p. 62.

enanthic acid, piperazinium salt. $C_4H_{10}N_2 \cdot 2C_6H_{13}COOH$; m.w. 346.31; wh. cr.; m.p. 95-6; s.w.; s.al.

enanthic anhydride (heptanoic anhydride). $[CH_3(CH_2)_5CO]_2O$; m.w. 242.20; liq.; m.p. 17; b.p. 258; i.w.; s.al.

enanthole. See enanthaldehyde.

enanthone. See 7-tridecanone.

enanthylic acid. See enanthic acid.

enanthylidene. See 1-heptyne.

enantiomorphic (enantiomorphous). Two crystalline or molecular structures that are bilaterally symmetrical but are mirror images of each other.

enantiotropic. Substances one of whose crystalline forms can be converted to the other, e.g. sulfur.

enantiotropy. The state of reversible polymorphism (q.v.).

enargite. A mineral, $3Cu_2S \cdot As_2S_5$; rhomb., gray to blk.; sp.gr. 4.43-4.55; hardness 3.

encaustic tile. Tile which has been coated with materials and which is heated to fix the color.

end. An individual warp yarn.

end point. Maximum distillation temperature when a substance is distilled; the stoichiometric point as shown by an indicator, potentiometer or other means, in a titration.

endemic. Type of disease which is always present, in a locality, in a limited number of cases, e.g. diphtheria.

endo-. Prefix meaning inside.

endo-enzyme. Enzyme contained in cells and combined with protoplasmic substances.

endogenous. Plants that grow from within.

endoplasm (endosarc). Granular, more liquid, inner layer of protoplasm of the protoplasm of protozoans.

endosarc. See endoplasm.

endosmosis. The passing of a fluid inward thru a porous partition separating it from another fluid of different character; the opposite of exosmosis.

endospore. Highly resistant round or oval body formed in bacteria.

endothermic reaction. Reaction which absorbs heat.

endurance limit. See fatigue.

-ene. Suffix denoting open-chain unsaturated hydrocarbons having one double bond, e.g. propene; suffix denoting an aromatic cyclic hydrocarbon, e.g. benzene.

energy. Capacity for doing work.

energy, activation. See activation energy.

energy, characteristic. See proper energy.

energy, free. Amount of energy in chemical transformations that may be obtained as net available external work; thermodynamic potential at constant volume.

energy, intrinsic. See intrinsic energy.

energy level. See quantum state.

energy of activation. Minimum energy which a molecule must acquire before it can be regarded as being activated, difference between the energy of an activated molecule and the mean energy of all the molecules.

energy, potential. See potential energy.

energy, proper. See proper energy.

energy, quantization of. See quantization of energy.

energy, radiant. See radiant energy.

energy, specific. See specific energy.

energy, surface. See surface energy.

enfleurage. The method used to obtain delicate, odoriferous substances from certain flowers by absorption with fats in the cold.

engine distillate. Refined or unrefined petroleum distillate, similar to naphtha but may have a higher distillation range.

Engler distillation (A.S.T.M. distillation). Standard laboratory method for determining boiling range of petroleum distillates.

English red. See iron oxide.

English sperm candle. Measure of intensity of light source; 1 International candle.

English white. See calcium carbonate.

enneamethylene glycol. See 1, 9-nonanediol.

-enol. Suffix for names of unsaturated alcohols, e.g. propenol, $CH_2{=}CH{=}CH(OH)$.

enol form. Structure containing the group $-C{=}C<_{O\,H}$ which may be changed to the keto form (q.v.).

ensilage. Cattle fodder; see ensilaging.

ensilaging. Production of cattle fodder by natural bacterial fermentation of hay or vegetables.

enstatite. A mineral, $MgO \cdot SiO_2$; rhomb., grayish or yelsh., wh., grnsh. or brnsh.; sp.gr. 3.10-3.43; hardness 5-6. Iron containing forms are bronsite and hypersthene.

enteric. Having to do with the intestines.

entire equilibrium, principle of. See microscopic reversibility, principle of

trainment. Loss of a liquid in the form of fine mist.

tropy. A property of a substance which, together with temperature, gives the complete specifications of the thermal condition of the substance with respect to the heat energy to mechanical energy transformation; a measure of the disorganization of a system.

velope. Locus of intersection of consecutive elements of a family of curves.

nyl. Ending of univalent radicals derived from unsaturated aliphatic hydrocarbons, e.g. ethynyl, CH≡C—.

nzyme. A non-living organic catalyst which is the product of the activity of a living cell, e.g. zymase.

olotropic. See aeolotropic.

osin (2, 4, 5, 7-tetrabromofluorescein). $C_{20}H_8Br_4O_5$; m.w. 647.73; red monocl. need.; i.w.; s.al.

osin (dye) (alkali salt or eosin). $C_{20}H_6Br_4Na_2O_5$; m.w. 691.70; red-br. powd.; s.w.; s.al.

phebiogenesis. Reproduction where only male cells are present.

phedrine (2-methylamino-1-phenyl-1-propanol [one form]). $C_6H_5CHOH\text{-}CH(NHCH_3)CH_3 \cdot H_2O$; m.w. 183.14; col. cr. f. et.; m.p. 43; s.w.; s.al.

phedrine, hydrochloride (l). $C_{10}H_{15}NO \cdot HCl$; m.w. 201.59; wh. need.; s.w.; s.al.

phedrine, sulfate. $(C_{10}H_{15}NO)_2 \cdot H_2SO_4$; m.w. 428.33; wh. cr.; s.w.; s.al.

picycloid. Curve traced by a point on the circumference of a circle which rolls on the outside rim of a fixed circle.

pichlorohydrin (α-epichlorohydrin; 1-chloro-2, 3-epoxypropane; γ-chloropropylene oxide; [chloromethyl] oxirane). OCH_2CHCH_2Cl; m.w. 92.50; col. liq.; m.p. −25.6; b.p. 117; i.w.; s.al.

picyanohydrin (β, γ-epoxybutyronitrile; γ-cyanopropylene oxide; oxiraneacetonitrile). OCH_2CHCH_2CN; m.w. 83.05; pr.; m.p. 162; s.w.; s.al.

α-epidibromohydrin. See propene, 2, 3-dibromo-.

α-epidichlorohydrin. See propene, 2, 3-dichloro-.

epidote (pistacite). A mineral, $4CaO \cdot 3(AlFe)_2O_3 \cdot 6SiO_2 \cdot H_2O$; monocl., yelsh. to blksh. grn.; rar. red or col.; sp.gr. 3.07-3.50; hardness 6-7.

epihydric alcohol. See glycidol.

epimerism. Difference between stereoisomers because of different arrangements of hydrogen and hydroxyl attached to a carbon atom.

epinasty. Expression by a mature plant of a set of changes due to unequal development of various parts, with resultant bending or twisting.

epinephrine. See adrenaline.

epiiodohydrin (α-epiiodohydrin; 1, 2-epoxy-3-iodopropane; γ-iodopropylene oxide; [iodomethyl]oxirane). OCH_2CHCH_2I; m.w. 183.96; liq.; b.p. 160-80; i.w.; s.al.

Epok. Synthetic oil soluble tar-acid resin.

epsilon acid (1-naphthylamine-3, 8-disulfonic acid). $C_{10}H_5(NH_2)(SO_3H)_2$ 1:3:8.; light col. powd.; s.w.; used in mfr. of dyestuffs.

epsom salt. See epsomite.

epsomite (epsom salt). A mineral, $MgSO_4 \cdot 7H_2O$; rhomb., col. or wh.; sp.gr. 1.68; hardness 2.0-2.5.

equation. A mathematical or symbolic statement of two equalities expressed by an equal (=) sign between them, e.g. $y = x^2 - 5$; $Cu + S = CuS$.

equation, characteristic. See characteristic equation.

equation, chemical. See chemical equation.

equation, homogeneous. One in which the sum of the exponents of the unknown in each term is the same.

equation, linear. Equation whose graph is a straight line.

equation, mathematical. A statement of equality between two expressions, e.g. $4x - 3 = 5$.

equation of state. Mathematical formula which expresses relation between pressure, volume and temperature of a substance in any state of aggregation.

equation, Planck-Einstein. See Planck-Einstein equation.

equation, Poisson. See Poisson equation.

equation, quadratic. See quadradic equation.

equation, simultaneous. Equation in which two or more unknown numbers are satisfied by the same values of the same unknowns, e.g. $x + y = 4$, $x - y = 2$.

equilibriant. Single force producing equilibrium in a system of forces.

equilibrium. A state in which the forces acting on a system are balanced.

equilibrium distillation (flash distillation). Vaporizing a definite fraction of a batch of liquid, keeping all of the vapor in intimate contact so that at the end of the operation the vapor is in equilibrium with the liquid, then withdrawing the vapor and condensing it.

equilibrium, mobile. See mobile equilibrium.

equilibrium, radiative. See radiative equilibrium.

equilibrium, statistical. See statistical equilibrium.

equilibrium, three phase. See three phase equilibrium.

equimomental. Two or more bodies of equal mass and equal moments of inertia about corresponding axes.

equipartition, law of. Every particle, heavy or light, gaseous or liquid and independently of its chemical nature or form, always possesses the same mean energy of translation at a given temperature.

equipartition of energy. In an arbitrary system of moving particles, the mean value of the kinetic energy of a particle for each independent type of motion will be a constant, when equilibrium has been reached, regardless of the nature, shape or mass of the particles.

equipotential energy. Energy present at a uniform potential thruout a system.

equivalent, chemical. See chemical equivalent.

equivalent composition. Atomic percentage of the solute element multiplied by its valency.

equivalent conductivity. Specific conductance (q.v.) multiplied by volume in cubic centimeters containing 1 gram equivalent of the electrolyte.

equivalent electrons. Electrons of equal azimuthal quantum numbers and principal quantum numbers; electrons of identical orbital properties but which may have a difference in sign of their orbital moments.

equivalent point. Point at which a reaction has been exactly, quantitatively completed.

equivalent weight (combining weight). The weight in grams of an element or radical which will combine with or replace 1.008 grams of hydrogen; atomic weight of an element or radical divided by the valence; the molecular weight of a compound divided by the valence with respect to the particular element or radical involved in the reaction, oxidation-reduction reactions the atomic or molecular weight divided by the total valence change; e.g. equivalent weight of $K_2Cr_2O_7$ in an oxidation-reduction reaction would be $\frac{K_2Cr_2O_7}{3 \times 2}$, in a double replacement it would be $\frac{K_2Cr_2O_7}{2}$.

equivalents, law of. Substances combine together in the ratio of their combining weights.

erbium. Er; m.w. 167.2; dk. gray powd.; s.g. 4.77 [15] (?); a metallic element, a member of the family of rare earths which includes thulium, erbium, holmium and dysprosium, forming highly colored salts and the oxide Er_2O_3.

erbium acetate. $Er(C_2H_3O_2)_3 \cdot 4H_2O$; m.w. 416.77; triclinic; s.g. 2.114.

erbium chloride. $ErCl_3 \cdot 6H_2O$; m.w. 382.10; deliq.; s.w.; s.al.

erbium nitrate. $Er(NO_3)_3 \cdot 6H_2O$; m.w. 461.76; redsh. cr.; s.w.; s.al.

erbium oxalate. $Er_2(C_2O_4)_3 \cdot 10H_2O$; m.w. 779.44; redsh. micr. powd.; s.g. 2.64 (?); m.p. d. 575; b.p. 3000.

erbium oxide. Er_2O_3; m.w. 383.28; rose red powd.; s.g. 8.640.

erbium sulfate. $Er_2(SO_4)_3$; m.w. 623.46; s.g. 3.678; s.w.

erbium sulfate (hydrated). $Er_2(SO_4)_3 \cdot 8H_2O$; m.w. 767.58; monocl. rose red; s.g. 3.180; s.w.

eremacausis. The slow decomposition of vegetable matter.

ereptase. Enzyme, found in intestines, which hydrolyzes peptones and some polypeptides to amino acids.

erg. The work done by a force of 1 dyne moving over a distance of 1 centimeter in the direction of the force.

ergosterol (ergosterin). $C_{27}H_{43}O$; m.w. 382.33; cr.; m.p. 160-3; i.w.; s.al.

ergot of rye. A fungus growth on rye used in medicine.

ergotinine (amorphous). See ergotoxine.

d-ergotinine. $C_{35}H_{39}N_5O_5$; m.w. 609.34; lng. need. f.al., sol. fluores. vlt.; m.p. 229; i.w.

ergotoxine (ergotine [amorphous]). $C_{35}H_{41}N_5O_6$; m.w. 627.36; wh. amor. powd.; m.p. 162-4; s.w.; s.al.

erigeron oil. See oil, erigeron.

Erinoid. A synthetic resin made from casein and formaldehyde and used as a substitute for amber, ivory, ebony, tortoise-shell, etc.

eriochalcite. See copper chloride(ic).

Erlenmeyer flask. A conical type flask having a flat bottom and a short, narrow, straight-sided neck.

Ermite. Synthetic oil soluble tar-acid resin.

error, constant. A factor, the existence of which has not been recognized which affects the accuracy of a result in one direction. It has the same magnitude and sign and the same effect in all observations of a series.

error, mean. See deviation, standard.

error, mean square. See deviation, standard.

error of mean square. See deviation, standard.

error, probable. See probable error.

error, systematic. Error having a sign and magnitude bearing a fixed relation to one or more of the conditions of observation.

erubescite. See bornite.

erucic acid (cis) (cis-13-docosenoic acid). $CH_3(CH_2)_7CH:CH(CH_2)_{11}COOH$; m.w. 338.33; col. need. f.al.; m.p. 33.5; b.p. 281 [30]; i.w.; s.al.

trans-erucic acid. See brassidic acid.

erythrene. See 1, 3-butadiene.

erythrite (cobalt bloom). A mineral, $Co_3(AsO_4)_2 \cdot 8H_2O$; monocl., red, pink, or pearl gray; sp.gr. 2.912-2.948; hardness 1.5-2.5.

i-erythritol (anti-1, 2, 3, 4-butanetetrol; ordinary erythrite; erythrol; erythroglucin; phycitol). $(CH_2OHCHOH)_2$; m.w. 122.08; wh. tetr. pr.; m.p. 119-20; b.p. 331; s.w.; s.al.

i-erythritol, anhydride (1, 2, 3, 4-diepoxybutane [one form]; bioxirane). $OCH_2CHCHCH_2O$; m.w. 86.05; col. liq.; b.p. 138.

i-erythritol, tetranitrate (erythrol tetranitrate; nitroerythrite). $(CHNO_2\text{-}CH_2NO_3)_2$; m.w. 302.08; leaf. f.al.; m.p. 61; i.w.; s.al.

erythrocyte, Red blood corpuscle.

erythroglucin. See i-erythritol.

erythrohydroxyanthraquinone. See anthraquinone, 1-hydroxy-.

erythrol. See i-erythritol.

erythrosin (2, 4, 5, 7-tetraiodofluorescein) $C_{20}H_8I_4O_5$; m.w. 835.74; or. cr. f.et. i.w.; s.al.

erythrosin (dye) (alkali salt of erythrosin iodeosin B). $C_{20}H_6I_4Na_2O_5$; m.w. 879.72; red-br. powd.; s.w.; s.al.

eschenite. A complex mineral containing titanium, columbium, thorium, cerium, and other rare earths.

escherichia coli. See b. coli.

Esclangon effect. Deviation of reflected light ray because of the mirror moving obliquely.

esculetin (6, 7-dihydroxycoumarin; aesculetin). $(HO)_2C_6H_2OCOCH:CH$; m.w. 178.05; need.; s.w.; s.al.

esculin (aesculin). $C_{15}H_{16}O_9 \cdot \frac{1}{2}H_2O$; m.w. 349.13; wh. need.; m.p. anh. 205.

eserine. See physostigmine.

esparto. A Spanish grass with a tough fiber used for cordage and for paper making.

essence. An alcoholic or other preparation of plant constituents, fruit juices, etc.

essential oil. See oil, essential.

ester. Compound formed by the elimination of water of the reaction between a molecule of an alcohol and a molecule of acid; compound derived from acids by replacing an ionizable hydrogen atom by a hydrocarbon radical, e.g. ethyl acetate.

ester gum. See gum, ester.

ester number. The sum of the saponification number and acid number of fats, oils, and waxes.

esterase. Enzyme acting upon fats or esters, e.g. lipase and butyrase.

esterification. The process of producing an ester.

Esterol. Synthetic resin of polybasic acid polyhydric alcohol fatty acid type.

estragole (estragol; p-allylanisole; chavicol methyl ether). $CH_2:CH\text{-}CH_2C_6H_4OCH_3$; m.w. 148.09; oil; b.p. 215; i.w.; s.al.

estragon oil. See oil, estragon.

ethal. See cetyl alcohol.

ethanal. See acetaldehyde and corresponding derivatives.

ethanamide, 2-chloro-. See acetamide, α-chloro-.

ethanamide, 2, 2-dichloro-. See acetamide, α, α-dichloro-.

ethanamide, 2, 2, 2-trichloro-. See acetamide, trichloro-.

ethanal, hydroxy-. See glycolaldehyde.

ethanal, 2, 2, 2-tribromo-. See bromal.

ethanal, trichloro-. See chloral.

ethanamide. See acetamide.

ethanamide, 2-cyano-2-nitro-. See fulminuric acid.

ethanamide, 2-hydroxy-. See glycolamide.

ethanamidine. See acetamidine.

ethananol, 1, 2-diphenyl- (benzylphenylcarbinol). $C_6H_5CH_2CHOHC_6H_5$; m.w. 198.11; need.; m.p. 66-8; b.p. 167-70 [10]; s.w.; s.al.

ethane (bimethyl; methylmethane; dimethyl). CH_3CH_3; m.w. 30.05; col. gas.; m.p. −172; b.p. −88.3; s.w.; s.al.

ethane, amino-. See ethylamine.

ethane, 1-amino-1-phenyl-. See benzylamine, α-methyl-.

ethane, 1-amino-2-phenyl-. See phenethylamine.

ethane, arsino-. See arsine, ethyl-.

ethane azobenzene. See benzeneazoethane.

ethane, 1, 2-bisphenylsulfonyl- (ethylenebisphenylsulfone). $(CH_2SO_2C_6H_5)_2$; m.w. 310.23; need. or leaf. f.al.; m.p. 180; s.w.; s.al.

ethane, bromo-. See ethyl bromide.

ethane, 1-bromo-2-chloro- (ethylenechlorobromide). CH_2ClCH_2Br; m.w. 143.40; col. liq.; m.p. 16.6; b.p. 107-8; s.al.

ethane, 1-bromo-2-ethoxy-. See ether, β-bromoethyl ethyl.

ethane, 1-bromo-1-phenyl-. See ben-

zene, (α-bromoethyl)-.
ethane, chloro-. See ethyl chloride.
ethane, 1-chloro-2-(β-chloroethoxy)-. See ether, bis-β-chloroethyl.
ethane, 1-chloro-2-(β-chloroethylthio)-. See sulfide, β, β′-dichloroethyl-.
ethane, 1-chloro-1-ethoxy-. See ether, α-chloroethyl ethyl.
ethane, 1-chloro-2-ethoxy-. See ether, β-chloroethyl ethyl.
ethane, sym-diacetyl-. See 2, 5-hexanedione.
ethanedial. See glyoxal.
ethanediamide. See oxamide.
1, 2-ethanediamine. See ethylenediamine.
ethane, 4, 4′-diamino-sym-diphenyl-. See α, α-bi-p-toluidine.
ethane, 1, 1-dibromo- (ethylidene bromide; ethylidene dibromide). CH_3CHBr_2; m.w. 187.86; liq.; b.p. 110; i.w.; s.al.
ethane, 1, 2-dibromo-. See ethylene bromide.
1, 1-ethanedicarboxylic acid, 1-hydroxy-2-phenyl-. See tartronic acid, benzyl-.
ethane, 1, 1-dichloro- (ethylidene chloride; ethylidene dichloride). CH_3CHCl_2; m.w. 98.95; col. liq.; m.p. −96.7; b.p. 57.3; s.al.
ethane, 1, 2-dichloro-. See ethylene chloride.
ethane, 1, 1-dichloro-2, 2-diethoxy. See acetal, dichloro-.
ethane, 1, 2-dichloro-1-ethoxy-. See ether, α, β-dichloroethyl.
ethane, dichlorotetrafluoro-. $C_2F_4Cl_2$; m.w. 170.91; col. gas.; b.p. 4; i.w.; s.al.
ethane, 1, 1-diethoxy-. See acetal.
ethane, 1, 1-diiodo- (uns-diidoethane; ethylidine iodide; ethylidene diiodide). CH_3CHI_2; m.w. 281.87; liq.; b.p. 179; i.w.; s.al.
ethane, 1, 2-diiodo-. See ethylene iodide.
ethane, 1, 1-dimethoxy- (acetaldehyde dimethyl acetal; dimethyl acetal; ethylidene dimethyl ether). $CH_3CH(OCH_3)_2$; m.w. 90.08; col. inflam. liq.; b.p. 64.5; s.w.; s.al.
ethanedinitrile. See cyanogen.
ethane, 1, 1-dinitro- (uns-dinitroethane). $CH_3CH(NO_2)_2$; m.w. 120.05; liq.; b.p. 185-6; s.w.; s.al.
ethanedioic acid. See oxalic acid.
1, 2-ethanediol. See glycol.
1, 2-ethanediol, 1, 2-diphenyl-. See hydrobenzoin; isohydrobenzoin.
1, 2-ethanediol, 1, 2-dicyclohexyl- (dodecahydrohydrobenzoin; cyclohexanone pinacol). $C_{11}H_{22}O_2$; m.w. 198.17; need.; m.p. 129-30.
2-ethanediol, 1, 1, 2, 2-tetraphenyl-. See benzopinacol.
1, 1-ethanediol, 2, 2, 2-tribromo-. See bromal, hydrate.
1, 1-ethanediol, 2, 2, 2-trichloro-. See chloral hydrate.
ethanedioyl chloride. See oxalyl chloride.
ethane, 1, 2-diphenoxy- (glycol diphenyl ether; ethylene diphenyl ether). $(CH_2OC_6H_5)_2$; m.w. 214.11; col. leaf. f.al.; m.p. 98.5; s.w.; s.al.
ethane, 1, 1-diphenyl- (uns-diphenyl ethane; α-methylditan). $(C_6H_5)_2CH-CH_3$; m.w. 182.11; col. oil; b.p. 272; i.w.; s.al.
ethane, sym- or 1, 2-diphenyl-. See bibenzyl.
1, 2-ethanedisulfonic acid (ethylenedisulfonic acid). $C_2H_4(SO_3H)_2$; m.w. 190.17; cr. f.ac.a.; m.p. 104; s.w.; s.al.
1, 2-ethanedithiol (dithioglycol; ethylene mercaptan; ethylene dimercaptan). $HSCH_2CH_2SH$; m.w. 94.17; liq.; b.p. 146; s.al.
ethane, 1, 2-epoxy-. See ethylene oxide.
ethane, ethenyloxy-. See ether, ethyl vinyl.
ethane, ethoxy-. See ethyl ether.
ethane, 1-ethoxy-2-(β-ethoxyethoxy)-. See ether, bis(β-ethoxyethyl).
ethane, ethyldithio-. See ethyl disulfide.
ethane, ethyl methyl-. See butane.
ethane, ethyl sulfinyl-. See ethyl sulfoxide.
ethane, ethyl sulfonyl-. See ethyl sulfone.
ethane, ethylthio-. See ethyl sulfide.
ethane, fluoro-. See ethyl fluoride.
ethane, hexabromo- (perbromoethane). CBr_3CBr_3; m.w. 503.50; rhomb. pr.; i.w.; s.al.
ethane, hexachloro- (perchloroethane; carbon hexachloride). CCl_3CCl_3; m.w. 236.74; col. rhomb. tab. f.al. or et.; i.w.; s.al.
ethane hexamercarbide. $C_2Hg_3O_2(OH)_2$; m.w. 1293.68; yelsh.-wh. powd.; m.p. exp. 230; i.w.
ethane, hexamethyl-. See butane, 2, 2, 3, 3-tetramethyl-.
ethane, hexaphenyl-. $(C_6H_5)_3C-C(C_6H_5)_3$; m.w. 486.23; col. cr.; i.w.; s.al.
ethane, iodo-. See ethyl iodide.
ethane, methoxy-. See ether, ethyl methyl.
ethane, methylthio-. See sulfide, ethyl methyl.
ethane, naphthyl-. See naphthalene, ethyl-.
ethanenitrile. See acetonitrile.
ethanenitrile, 2-oxo-2-phenyl-. See benzoyl cyanide.
ethanenitrile, trinitro-. See acetonitrile, trinitro-.
ethane, nitro-. $C_2H_5NO_2$; m.w. 75.05; liq.; m.p. < −50; b.p. 114.8; s.w.; s.al.
ethane, pentabromo-. $CHBr_2CBr_3$; m.w. 424.59; monocl. pr.; m.p. 57; i.w.; s.al.
ethane, pentachloro-. $CHCl_2CCl_3$; m.w. 202.29; liq.; m.p. −29; b.p. 162; i.w.; s.al.
ethane, pentachloro (pentachloroethoxy)-. See ether, bis(pentachloroethyl).
ethane, pentaiodo-. CHI_2Cl_3; m.w. 659.61; col. monocl. pr. f.ac.a.; m.p. 56-7; i.w.; s.al.
ethane, perbromo-. See ethane, hexabromo-.
ethane, perchloro-. See ethane, hexachloro-.
ethane, phenyl-. See benzene, ethyl-.
ethane, phosphino-. See phosphine, ethyl-.
ethanesulfinic acid (ethylsulfinic acid). $C_2H_5SO_2H$; m.w. 94.11; syrup.
ethanesulfonic acid. $(C_2H_5SO_2OH)$; m.w. 110.11; hyg. cr.; s.w.; s.al.
ethanesulfonic acid, 2-amino-. See taurine.
ethanesulfonic acid, 2-hydroxy-. See isethionic acid.
ethanesulfonyl chloride (ethylsulfonyl chloride). $C_2H_5SO_2Cl$; m.w. 128.56; liq.; b.p. 177.5.
ethane, 1, 1, 2, 2-tetrabromo- (sym-tetrabromoethane; acetylene tetrabromide). $CHBr_2CHBr_2$; m.w. 645.68; col.-yel. liq.; m.p. 0.1; b.p. 151 [54]; s.al.
ethane, 1, 1, 1, 2-tetrabromo- (unstetrabromoethane). CH_2BrCBr_3; m.w. 345.68; col. liq.; m.p. 0; b.p. 103.5 [12.5]; s.al.
1, 1, 2, 2-ethanetetracarboxylic acid, tetraethyl ester (ethyl sym-ethanetetracarboxylate). $(COOC_2H_5)_2CH-CH(COOC_2H_5)_2$; m.w. 318.17; pr.; m.p. 76; s.al.
ethane, 1, 1, 1, 2-tetrachloro- (unstetrachloroethane). CH_2ClCCl_3; m.w. 167.84; liq.; b.p. 130.5; i.w.; s.al.
ethane, 1, 1, 2, 2-tetrachloro- (sym-tetrachloroethane; acetylene tetrachloride). $CHCl_2CHCl_2$; m.w. 167.84; col. liq.; m.p. −43.8; b.p. 146.3; i.w.; s.al.
ethane, 1, 1, 1, 2-tetraphenyl- (unstetraphenylethane; triphenylbenzylmethane; α-benzyltritan). $(C_6H_5)_2-CCH_2C_6H_5$; m.w. 334.17; col. monocl. f.et.; m.p. 144; b.p. 277-80 [21]; i.w.; s.al.
ethane, 1, 1, 2, 2-tetraphenyl- (sym-tetraphenylethane). $(C_6H_5)_2CHCH-(C_6H_5)_2$; m.w. 334.17; col. rhomb. need. f. chl.; m.p. 211; b.p. 383.
ethanethial, trimer. See sym-trithiane, 2, 4, 6-trimethyl-.
ethanethiol (ethyl mercaptan; ethyl hydrosulfide; ethyl thioalcohol). C_2H_5SH; m.w. 62.11; liq.; m.p. −121; b.p. 34.7; s.al.
ethanethiolic acid. See acetic acid, thiol-.
ethanethiol, sodium derivative (sodium mercaptide; sodium thioethylate). C_2H_5SNa; wh. cr.; s.w.; s.al.
ethanethionamide. See acetamide, thio-.
ethane, 1, 1, 2-tribromo- (vinyl tribromide). $CH_2BrCHBr_2$; m.w. 266.77; liq.; m.p. −26; b.p. 188.4; s.al.
1, 1, 1-ethanetricarboxylic acid (ethenyltricarboxylic acid). $CH_3C(COOH)_3$; m.w. 162.05; pr.; s.w.; s.al.
1, 1, 2-ethanetricarboxylic acid, 1, 2-dihydroxy-. See desoxalic acid.
ethane, 1, 1, 1-trichloro- (methylchloroform). CH_3CCl_3; m.w. 133.39; col. liq.; b.p. 74.1; i.w.; s.al.
ethane, 1, 1, 2-trichloro- (vinyl trichloride). $CH_2ClCHCl_2$; m.w. 133.39; col. liq.; m.p. −36.7; b.p. 113.5; i.w.; s.al.
ethane, 1, 1, 1-trichloro-2, 2-diethoxy- (chloral diethyl acetal; trichloroacetal). $CCl_3CH(OC_2H_5)_2$; m.w. 221.46; liq.; b.p. 197; s.al.
ethane, 1, 1, 2-trichloro-1, 2, 2-trifluoro-. $C_2Cl_3F_3$; m.w. 187.37; m.p. −37; b.p. 47.7; i.w.; s.al.
ethane, 1, 1, 1-triethoxy-. See orthoacetic acid, triethyl ester.
ethane, 1, 1, 1-triiodo- (methyliodoform). CH_3CI_3; m.w. 407.78; yel. octahdr.; s.al.
ethane, 1, 1, 1, triphenyl- (α-methyltritan). $(C_6H_5)_3CCH_3$; m.w. 258.14; monocl. leaf. f.dil.al. or et.; m.p. 95; i.w.; s.al.
ethane, 1, 1, 2-triphenyl-. $(C_6H_5)_2-CHCH_2C_6H_5$; m.w. 258.14; monocl. leaf. f.dil.al.; m.p. 54-4.5; b.p. 348-9 [751]; i.w.; s.al.
ethanoate. Same as acetate; see corresponding ester of acetic acid.
ethanoic acid. See acetic acid and the corresponding derivatives.
ethanoic acid, γ-methylbutyl-. See acetic acid, isoamyl ester.
ethanoic acid, oxo-. See glyoxylic acid.
ethanoic anhydride. See acetic anhydride.
ethanol. See ethyl alcohol.
ethanol, 2-allyl-. See 4-penten-1-ol.
ethanolamine. See ethanol, 2-amino-.
ethanol, 1-amino-. See acetaldehyde-ammonia.
ethanol, 2-amino- (β-aminoethyl alcohol; ethanolamine; ethylolamine; β-hydroxyethylamine). $NH_2CH_2CH_2-OH$; m.w. 61.06; col. liq.; m.p. 10.5; b.p. 172.2; s.w.; s.al.
ethanol, 2-anilino- (β-hydroxyethylaniline; ethoxylaniline). $C_6H_5NH-CH_2CH_2OH$; m.w. 137.09; col. liq.; b.p. 286; s.w.; s.al.
ethanol, 2-benzyloxy- (glycolmonobenzyl ether; benzyl cellosolve). $C_6H_5CH_2OCH_2CH_2OH$; m.w. 152.09; col. liq.; m.p. < −75; b.p. 256.
ethanol, 2-bromo- (β-bromoethyl alcohol; ethylene bromohydrin). CH_2BrCH_2-OH; m.w. 124.96; col. liq.; b.p. 150.3; s.w.; s.al.
ethanol, 2-bromo-, acetate (β-bromoethyl acetate). $CH_3COOCH_2CH_2Br$; m.w. 166.97; col. liq.; m.p. −13.8; b.p. 161.5-4.5; s.w.; s.al.
ethanol, 2-butoxy- (glycol monobutyl ether; butyl cellosolve). $C_4H_9OCH_2-CH_2OH$; m.w. 118.11; col. liq.; sp.gr. .9017; b.p. 170.6; s.w.; s.al.; solvent in paints, lacquers, plastics.
ethanol, 2-(β-butoxyethoxy)-. See diethylene glycol, monobutyl ether.
ethanol, 2-chloro- (β-chloroethyl alcohol; ethylene chlorohydrin). CH_2ClCH_2-OH; m.w. 80.50; col. liq.; m.p. −69; b.p. 128.8; s.w.; s.al.
ethanol, 2-chloro, acetate (β-chloroethyl acetate; 2-chloroethyl ethanoate). $CH_3COOCH_2CH_2Cl$; m.w. 122.51; col. liq.; b.p. 145; i.w.; s.al.
ethanol, 2, 2-dichloro- (β, β-dichloroethyl alcohol). $CHCl_2CH_2OH$; m.w. 114.95; liq.; b.p. 146; s.w.; s.al.
ethanol, 2-diethylamino- (β-diethaminoethyl alcohol; 2-hydroxyethylamine). $(C_2H_5)_2NCH_2CH_2O$ m.w. 117.13; col. hygroscopic li b.p. 160; s.w.; s.al.; its fatty a derivatives are excellent emulsifyi agents in acid mediums; its so are textile softeners.
ethanol, 2-diethylamino-, p-amin benzoate hydrochloride. See procai hydrochloride.
ethanol, 2-dimethylamino- (β-dimeth aminoethyl alcohol). $(CH_3)_2NCH_2CH_2OH$; m.w. 89.09; col. liq.; b. 135; s.w.; s.al.
ethanol, 2-ethoxy- (glycol monoeth ether; cellosolve). $C_2H_5OCH_2CH_2-OH$; m.w. 90.08; col. liq.; sp.gr. .931 b.p. 135.1; s.w.; s.al.; solvent paints, varnishes, plastics, dyes.
ethanol, 2-ethoxy-, acetate (β-ethox ethyl acetate; cellosolve acetate $CH_3COOCH_2CH_2OC_2H_5$; m.w. 132.0 col. liq.; b.p. 156.2; s.w.; s.al.
ethanol, 2-(β-ethoxyethoxy)-. See ethylene glycol, monoethyl ether.
ethanol, 2-ethylamino- (β-hydroxyethylamine). $C_2H_5HNCH_2CH_2OH$ m.w. 89.09; liq.; b.p. 167-9 [751]; s.w s.al.
ethanol, 2, 2′-ethylenedioxydi-. S triethylene glycol.
ethanol, 2, 2′-ethyliminodi- (β, β dihydroxytriethylamine). $C_2H_5N(CH_2CH_2OH)_2$; m.w. 133.13; yel. liq b.p. 251-2 [760]; s.w.; s.al.
ethanol, 2-heptyl-2-methyl-. See nonanol, 2-methyl-.
ethanol, 2, 2′-iminodi-. See diethanolamine.
ethanol, 2-methoxy- (glycol monometh ether; methyl cellosolve). $CH_3OCH_2CH_2OH$; m.w. 76.06; col. liq.; b. 124.3; sp.gr. .9660; s.w.; s.al.; thinn for varnishes, solvent for nitrocellulo and cellulose acetate; in dry cleani soaps.
ethanol, 2-methoxy-, acetate (glyc monomethyl ether acetate; meth cellosolve acetate). $CH_3COOCH_2CH_2OCH_3$; m.w. 118.08; liq.; b. 143; s.w.
ethanol, 2-(β-methoxyethoxy)-. See ethylene glycol, monomethyl ether.
ethanol, 2-methylamino- (β-hydroxy-methylethylamine). $CH_3HNCH_2CH_2-OH$; m.w. 75.08; col. liq.; b.p. 159 [7 s.w.; s.al.
ethanol, 2, 2′-methyliminodi- (β, β dihydroxy-n-methyldiethylamine $CH_3N(CH_2CH_2OH)_2$; m.w. 119.1 liq.; b.p. 246-8 [76]; s.w.; s.al.
ethanol, 2-methyl-2-propyl-. See pentanol, 2-methyl-.
ethanol, 2, 2′, 2″-nitrilotri- (triethylolamine; triethanolamine; β, β′, β trihydroxytriethylamine). $N(CH_2CH_2OH)_3$; m.w. 149.13; visc. c liq.; m.p. 21.2; b.p. 277-9 [100]; s.w.; s.a emulsifier of oils, preparation of soap in mfr. of synthetic resins.
ethanol, 2-nitro-. $NO_2CH_2CH_2OH$ m.w. 91.05; col. liq.; m.p. < −8 b.p. 193.8; s.w.; s.al.
ethanol, 2, 2′-oxydi-. See diethylene glycol.
ethanol, pentamethyl-. See 2-butanol, 2, 3, 3-trimethyl-.
ethanol, 1-phenyl-. See benzyl alcohol, α-methyl-.
ethanol, 2-phenyl-. See phenethyl alcohol.
ethanol, 2, 2′-thiodi- (thiodiglycol; bi β-hydroxyethyl sulfide). $S(CH_2CH_2-OH)_2$; m.w. 122.14; col. liq.; m.p. −1 b.p. 168 [14]; s.w.; s.al.
ethanol, 2, 2, 2-trichloro-. CCl_3CH_2OH m.w. 149.39; rhomb. tab.; m.p. 17 b.p. 152.2; s.w.; s.al.
ethanol, 2, 2, 2-trichloro-1-ethoxy-. S chloral, alcoholate.
1-ethanone, 2-ethoxy-1, 2-dipheny See benzoin ethyl ether.
ethanoyl. See corresponding "acety compound.
Ethavan. Ethyl vanillin.
ethene. See ethylene.
ethene, ethenyloxy-. See vinyl eth

ne, ethenylthio-. See vinyl sulfide.
nol. See vinyl alcohol.
none. See ketene.
nyl. See vinyl.
nylamine. See vinylamine.
nyl diphenyl amidine. See cetamide, N, N'-diphenyl-.
nyltricarboxylic acid. See 1, 1, -ethanetricarboxylic acid.
er. Organic compound in which wo hydrocarbon radicals are joined nru an atom of oxygen, e.g. ethyl ther, $C_2H_5—O—C_2H_5$.
er. See ethyl ether.
er drift. Hypothesis of relative notion of bodies with respect to space ther.
er, petroleum. See petroleum ether.
er, allyl cresyl. See ether, allyl olyl.
er, allyl ethyl (3-ethoxypropene). $C_2H_5OCH_2CH:CH_2$; m.w. 86.08; col. iq.; b.p. 67.4; i.w.; s.al.
er, allyl isoamyl (3-methyl-1-2-propenoxy] butane). $CH_2:CHCH_2$-$OCH_2CH_2CH(CH_3)_2$; m.w. 128.12; liq.; b.p. 120; s.w.; s.al.
er, allyl methyl (3-methoxypropene). $CH_2:CHCH_2OCH_3$; m.w. 72.06; col. liq.; b.p. 46; s.w.; s.al.
er, allyl 2-naphthyl (2-[2-propenoxy] naphthalene). $C_{10}H_7OCH_2CH:CH_2$; m.w. 184.09; oil.; i.w.
her, allyl phenyl (2-propenoxybenzene). $CH_2:CHCH_2OC_6H_5$; m.w. 134.08; col. oil; b.p. 192; i.w.; s.al.
her, allyl m-tolyl (3-[2-propenoxy]-toluene). $CH_2:CHCH_2OC_6H_4CH_3$; m.w. 148.09; b.p. 211-4.
her, allyl o-tolyl (2-[2-propenoxy] toluene; allyl o-cresyl ether). $CH_2:CHCH_2OC_6H_4CH_3$; m.w. 148.09; oil; b.p. 205-8.
her, allyl p-tolyl (4-[2-propenoxy]-toluene). $CH_2CHCH_2OC_6H_4CH_3$; m.w. 148.09; b.p. 214.5.
her, β-aminoethyl ethyl. See ethyl-amine, β-ethoxy-.
ther, amyl ethyl (1-ethoxypentane). $C_2H_5O(CH_2)_4CH_3$; m.w. 116.12; liq.; b.p. 119-20; s.w.; s.al.
ther, amyl methyl. See pentane, 1-methoxy-.
ther, amyl phenyl (amoxybenzene). $CH_3(CH_2)_4OC_6H_5$; m.w. 164.12; liq.; b.p. 111 [17].
ther, p-tert-amylphenyl-n-amyl. C_5H_{11}-$C_6H_4OC_5H_{11}$; m.w. 234.20; straw-colored; sp.gr. 0.905 [20]; b.p. 285-295.
ther, amyl tolyl. $C_5H_{11}OC_6H_4CH_3$; m.w. 178.14; col.-lt. yel.; sp.gr. 0.916 [20]; b.p. 227-264.
ther, amyl xylyl. $C_5H_{11}OC_6H_3(CH_3)_2$; m.w. 192.16; lt. yel.; sp.gr. 0.907 [20]; b.p. 250-263.
ther, benzyl butyl (1-benzyloxybutane). $C_6H_5CH_2O(CH_2)_3CH_3$; m.w. 164.12; b.p. 220-1 [744]; i.w.; s.al.
ther, benzyl ethyl (α-ethoxytoluene). $C_2H_5OCH_2C_6H_5$; m.w. 136.09; col. liq.; b.p. 185; i.w.; s.al.
ther, benzyl methyl (α-methoxy-toluene). $C_6H_5CH_2OCH_3$; m.w. 122.-08; liq.; b.p. 174; i.w.; s.al.
ther, benzyl 2-naphthyl (2-benzyloxy-naphthalene). $C_6H_5CH_2OC_{10}H_7$; m. w. 234.11; leaf. f.al.; m.p. 99; i.w.; s.al.
ther, bis-p-bromophenyl (4, 4'-di-bromodiphenyl ether; 1-bromo-4-[4-bromophenoxy] benzene). BrC_6H_4-OC_6H_4Br; m.w. 327.89; leaf. f.al.; m.p. 53-4; b.p. 338-40; i.w.; s.al.
ether, bis-β-chloroethyl (1-chloro-2-[β-chloroethoxy] ethane; sym-dichloro-ethyl ether; β, β'-dichlorodiethyl ether). $(ClC_2H_4)_2O$; m.w. 142.98; liq.; sp.gr. 1.222; m.p. −50; b.p. 178; s.al., s.w.; used in paint and varnish removers, wetting agents and as a solvent.
ether, bis-β-chloroisopropyl (1-chloro-2-[β-chloroisopropoxy] propane; β, β'-dichloroisopropyl ether). $ClCH_2CH$-$(CH_3)OCH(CH_3)CH_2Cl$; m.w. 171.01; col. liq.; b.p. 187.1.
ether, bischloromethyl (chloro [chloro-methoxy] methane; sym-dichlorodi-methyl ether). CH_2ClOCH_2Cl; m.w. 114.95; liq.; b.p. 106; s.al.
ether, bis-p-chlorophenyl (4, 4'-di-chloro-diphenyl ether). $(ClC_6H_4)_2O$; m.w. 238.98; b.p. 312-4; i.w.
ether, bis-β-ethoxyethyl (1-ethoxy-2-[β-ethoxyethoxy] ethane; diethylene gly-col diethyl ether; diethyl carbitol). $(C_2H_5OCH_2CH_2)_2O$; m.w. 162.14; col. liq.; b.p. 188; s.w.; solvent; high boiling medium.
ether, bis-p-nitrophenyl (1-nitro-4-[4-nitrophenoxy] benzene; 4, 4'-dinitro-diphenyl ether). $NO_2C_6H_4OC_6H_4NO_2$; m.w. 260.08; yel. need. f.al.; m.p. 142-3; i.w.; s.al.
ether, bispentachloroethyl (pentachloro-[pentachloroethoxy] ethane; perchloro-ether; decachlorodiethyl ether). $C_2Cl_5OC_2Cl_5$; m.w. 418.57; tetra. scales; m.p. 69.
ether, β-bromoethyl ethyl (1-bromo-2-ethoxyethane; β-bromoethyl ether). $BrCH_2CH_2OC_2H_5$; m.w. 152.99; b.p. 126-9; s.w.; s.al.
ether, bromophenyl methyl. See anisole, bromo-.
ether, butyl cresyl. See ether, butyl tolyl.
ether, butyl ethyl (1-ethoxybutane). $(C_2H_5)O(CH_2)_3CH_3$; m.w. 102.11; col. liq.; m.p. −124; b.p. 91.4; i.w.; s.al.
ether, tert-butyl ethyl (2-ethoxy-2-methylpropane). $C_2H_5OC(CH_3)_3$; m. w. 102.11; liq.; b.p. 68-9; i.w.; s.al.
ether, butyl 2-furylmethyl (butyl furfuryl ether). $C_4H_3OCH_2OC_4H_9$; m.w. 154.-11; col. liq.; b.p. 189-90 [765]; i.w.; s.al.
ether, butyl methyl (1-methoxybutane). $CH_3O(CH_2)_3CH_3$; m.w. 88.09; col. liq.; m.p. −115.5; b.p. 70.3; s.w.; s.al.
ether, butyl phenyl (butoxybenzene). $CH_3(CH_2)_3OC_6H_5$; m.w. 150.11; col. liq.; b.p. 210.3.
ether, n-butyl tetrahydrofurfuryl. See furan, 2-butoxymethyltetrahydro-.
ether, butyl m-tolyl (3-butoxytoluene). $CH_3C_6H_4OC_4H_9$; m.w. 164.12; b.p. 229.2.
ether, butyl o-tolyl (2-butoxytoluene; butyl o-cresyl ether). $CH_3C_6H_4$-$O(CH_2)_3CH_3$; m.w. 164.12; b.p. 223.0.
ether, butyl p-tolyl (4-butoxytoluene). $CH_3C_6H_4OC_4H_9$; m.w. 164.12; b.p. 229.5.
ether, cetyl phenyl (1-phenoxyhexa-decane). $C_6H_5OCH_2(CH_2)_{14}CH_3$; m. w. 318.30; leaf.; m.p. 41.8; b.p. 200 [1].
ether, chlorodiethyl. See ether, chloro-ethyl ethyl.
ether, α-chloroethyl ethyl (1-chloro-1-ethoxyethane; α-chlorodiethyl ether). $CH_3CHClOC_2H_5$; m.w. 108.53.
ether, β-chloroethyl ethyl (1-chloro-2-ethoxyethane; β-chlorodiethyl ether). $CH_2ClCH_2OC_2H_5$; m.w. 108.53; liq.; b.p. 107-8.
ether, chloromethyl methyl (chloro-methoxymethane). $ClCH_2OCH_3$; m. w. 80.50; liq.; m.p. −103.5; b.p. 59.5; s.al.
ether, chlorophenyl ethyl. See phene-tole, chloro-.
ether, cresyl ethyl. See ether, ethyl tolyl.
ether, cresyl methyl. See ether, methyl tolyl.
ether, cresyl propyl. See ether, propyl tolyl.
ether, decachlorodiethyl. See ether, bis(pentachloroethyl).
ether, diallyl. See allyl ether.
ether, di-n-amyl. See amyl ether.
ether, dibenzyl. See benzyl ether.
ether, 4, 4'-dibromodiphenyl. See ether, bis-p-bromophenyl.
ether, dibutyl. See butyl ether.
ether, dicetyl. See cetyl ether.
ether, dichloro-. See ether, α, β-di-chloroethyl ethyl.
ether, β, β'-dichlorodiethyl. See ether, bis-β-chloroethyl.
ether, sym-dichlorodimethyl. See ether, bischloromethyl.
ether, 4, 4'-dichlorodiphenyl. See bis-p-chlorophenyl.
ether, sym-dichloroethyl. See ether, bis-β-chloroethyl.
ether, α, β-dichloroethyl ethyl (1, 2-dichloro-1-ethoxyethane; dichloro-ether; α, β-dichloroethyl ether). CH_2-$ClCHClOC_2H_5$; m.w. 142.98; col. inflam. liq.; b.p. 140-5; s.al.
ether, β, β'-dichloroisopropyl. See ether, bis-β-chloroisopropyl.
ether, diethyl. See ethyl ether.
ether, di-n-heptyl. See heptyl ether.
ether, 2, 2'-dihydroxydiethyl. See di-ethylene glycol.
ether, 2, 2'-dihydroxyethyl. See di-ethylene glycol.
ether, diisoamyl. See isoamyl ether.
ether, diisobutyl. See isobutyl ether.
ether, diisopropyl. See isopropyl ether.
ether, dimethyl. See methyl ether.
ether, dinaphthyl. See naphthyl ether.
ether, di-n-octyl. See octyl ether.
ether, diphenyl. See phenyl ether.
ether, di-n-propyl. See propyl ether.
ether, divinyl. See vinyl ether.
ethereal. Like ether; light, volatile.
ether, ethylene diphenyl. See ethane, 1, 2-diphenoxy-.
ether, ethyl 2-furylmethyl (ethyl furfuryl ether). $C_4H_3OCH_2OC_2H_5$; m.w. 126.-08; col. liq.; b.p. 149.5-50.5 [770]; i.w.; s.al.
ether, ethyl heptyl (1-ethoxyheptane). $C_2H_5O(CH_2)_6CH_3$; m.w. 144.16; b.p. 166.6; i.w.; s.al.
ether, ethyl hexyl (1-ethoxyhexane). $C_2H_5O(CH_2)_5CH_3$; m.w. 130.14; liq.; b.p. 137; i.w.; s.al.
ether, ethylidene diethyl. See acetal.
ether, ethylidene dimethyl. See ethane, 1, 1-dimethoxy-.
ether, ethyl isoamyl (1-ethoxy-3-methyl-butane). $C_2H_5OCH_2CH_2CH(CH_3)_2$; m.w. 116.12; col. liq.; b.p. 112; i.w.; s.al.
ether, ethyl isobutyl (1-ethoxy-2-methyl-propane). $C_2H_5OCH_2CH(CH_3)_2$; m. w. 102.11; col. liq.; b.p. 80; i.w.; s.al.
ether, ethyl isopropyl (2-ethoxypro-pane). $C_2H_5OCH(CH_3)_2$; m.w. 88.09; col. liq.; b.p. 54; s.w.; s.al.
ether, ethyl methyl (methoxyethane). $CH_3OC_2H_5$; m.w. 60.06; col. liq. or gas; b.p. 7.9; s.w.; s.al.
ether, ethyl β-methylaminoethyl. See ethylamine, β-ethoxy-n-methyl-.
ether, ethyl β-4-morpholylethyl. See morpholine, 4-(β-ethoxyethyl)-.
ether, ethyl 1-naphthyl (1-ethoxy-naphthalene). $C_{10}H_7OC_2H_5$; m.w. 172.09; liq.; m.p. 5.5; b.p. 276.4; i.w.; s.al.
ether, ethyl 2-naphthyl (2-ethoxynaph-thalene; bromelia; nerolin [new]). $C_{10}H_7OC_2H_5$; m.w. 172.09; m.p. 37.5; b.p. 282; i.w.; s.al.
ether, ethyl octyl (1-ethoxyoctane). $C_2H_5O(CH_2)_7CH_3$; m.w. 158.17; liq.; b.p. 182-4; i.w.; s.al.
ether, ethyl phenyl. See phenetole.
ether, ethyl propargyl. See propyne, 3-ethoxy-.
ether, ethyl propyl (1-ethoxypropane). $C_2H_5OC_3H_7$; m.w. 88.09; col. liq.; m.p. < −79; b.p. 64; s.w.; s.al.
ether, ethyl tetrahydrofurfuryl. See furan, 2-ethoxymethyltetrahydro-.
ether, ethyl m-tolyl (3-ethoxytoluene). $CH_3C_6H_4OC_2H_5$; m.w. 136.09; b.p. 192.
ether, ethyl o-tolyl (2-ethoxytoluene; o-cresyl ethyl ether). $CH_3C_6H_4O$-C_2H_5; m.w. 136.09; liq.; b.p. 180.1.
ether, ethyl p-tolyl (4-ethoxytoluene). $CH_3C_6H_4OC_2H_5$; m.w. 136.09; liq.; b.p. 189.9.
ether, ethyl vinyl (ethenoxyethane). $CH:CH_2OC_2H_5$; m.w. 136.09; liq.; b.p. 35.5; s.w.; s.al.
ether, 2-furylmethyl methyl (furfuryl methyl ether). $C_4H_3OCH_2OCH_3$; m. w. 112.06; col. liq.; b.p. 134-5 [765]; i.w.; s.al.
ether, heptyl methyl (1-methoxy-heptane). $CH_3OC_7H_{15}$; m.w. 130.14; col. liq.; b.p. 149.8; i.w.; s.al.
ether, heptyl phenyl (1-phenoxyhep-tane). $C_6H_5O(CH_2)_6CH_3$; m.w. 192.-16; b.p. 266.8.
ether, hexyl phenyl (hexyloxybenzene; 1-phenoxyhexane). $CH_3(CH_2)_5O$-C_6H_5; m.w. 178.14; b.p. 246.
etherification. The process of preparing ethers.
ether, isoamyl 1-naphthyl (1-[γ-methyl-butoxy] naphthalene). $C_{10}H_7OCH_2$-$CH_2CH(CH_3)_2$; m.w. 214.14; liq.
ether, isoamyl 2-naphthyl (2-[γ-methyl-butoxy] naphthalene). $C_{10}H_7OCH_2$-$CH_2CH(CH_3)_2$; m.w. 214.14; leaf.; m.p. 26.5; i.w.; s.al.
ether, isoamyl phenyl (isoamoxyben-zene; 3-methyl-1-phenoxybutane). $C_6H_5O(CH_2)_2CH(CH_3)_2$; m.w. 164.12; col. liq.; b.p. 225.
ether, isobutyl methyl (1-methoxy-2-methylpropane). CH_3OCH_2-$CH(CH_3)_2$; m.w. 88.09; liq.; b.p. 59 [743]; i.w.; s.al.
ether, isobutyl phenyl (isobutoxyben-zene; 2-methyl-1-phenoxypropane). $(CH_3)_2CHCH_2OC_6H_5$; m.w. 150.11; col. liq.; b.p. 198.
ether, isopropyl. See isopropyl ether.
ether, isopropyl methyl (2-methoxy-propane). $CH_3OCH(CH_3)_2$; m.w. 74.08; col. liq.; b.p. 32.5 [777]; s.w.; s.al.
ether, isopropyl phenyl (isopropoxy-benzene; 2-phenoxypropane). $(CH_3)_2$-$CHOC_6H_5$; m.w. 136.09; col. liq.; b.p. 177.2.
ether, methylene diethyl. See methane, diethoxy-.
ether, methylene dimethyl. See methane, dimethoxy-.
ether, o, o'-methylenediphenyl. See xanthene.
ether, methylenedipropyl. See methane, dipropoxy-.
ether, methyl 1-naphthyl (1-methoxy-naphthalene; methyl α-naphthyl ether). $C_{10}H_7OCH_3$; m.w. 158.08; col. liq.; m.p. < −10; b.p. 265-9; i.w.; s.al.
ether, methyl 2-naphthyl (2-methoxy-naphthalene; methyl β-naphthyl ether; nerolin [old]; yara-yara). $C_{10}H_7O$-CH_3; m.w. 158.08; col. leaf. f.et.; m.p. 72; b.p. 274; s.w.; s.al.
ether, methyl phenyl. See anisole and the corresponding derivatives.
ether, methyl propargyl. See propyne, 3-methoxy-.
ether, methyl propyl (1-methoxy-propane). $CH_3OCH_2CH_2CH_3$; m.w. 74.08; col. liq.; b.p. 38.9; s.al.
ether, methyl 6-quinolyl. See quinoline, 6-methoxy-.
ether, methyl m-tolyl (3-methoxy-toluene). $CH_3C_6H_4OCH_3$; m.w. 122.08; liq.; b.p. 177.2.
ether, methyl o-tolyl (2-methoxy-toluene; o-cresyl methyl ether). CH_3-$C_6H_4OCH_3$; m.w. 122.08; liq.; b.p. 171.3; i.w.; s.al.
ether, methyl p-tolyl (4-methoxytoluene). $CH_3C_6H_4OCH_3$; m.w. 122.08; liq.; b.p. 176.5.
ether, 1-naphthyl propyl (1-propoxy-naphthalene). $C_{10}H_7OCH_2CH_2CH_3$; m.w. 186.11; liq.; b.p. 298-9.
ether, 2-naphthyl propyl (2-propoxy-naphthalene). $C_{10}H_7OCH_2CH_2CH_3$; m.w. 186.11; need.; m.p. 39.5-40.
ether, nitrous. See ethyl nitrite.
ether, octyl phenyl (1-phenoxyoctane). $C_6H_5O(CH_2)_7CH_3$; m.w. 206.17; col. liq.; m.p. 8; b.p. 285.2.
ether, perchloro-. See ether, bis(penta-chloroethyl).
ether, phenyl propyl (propoxybenzene). $C_9H_7OC_6H_5$; m.w. 136.09; col. liq.; b.p. 190.5; s.al.
ether, phenyl vinyl (ethenoxybenzene). $C_6H_5OCH:CH_2$; m.w. 120.06; b.p. 155-6.
ether, propyl m-tolyl (3-propoxytoluene). $CH_3C_6H_4OC_3H_7$; m.w. 150.11; b.p. 210.6.
ether, propyl o-tolyl (2-propenoxy-toluene; o-cresyl propyl ether). CH_3-$C_6H_4O(CH_2)_2CH_3$; m.w. 150.11; b.p. 204.1.
ether, propyl p-tolyl (4-propoxytoluene). $CH_3C_6H_4OC_3H_7$; m.w. 150.11; b.p. 210.4.
ethide. Compound of the type C_2H_5M where M is a metal, e.g. zinc ethide,

$(C_2H_5)_2Zn$.

ethine. See acetylene.

ethinyl tribromide. See ethylene, tribromo-.

ethinyl trichloride. See ethylene, trichloro-.

ethionic anhydride (carbyl sulfate; 1, 3, 2, 4-dioxadithiane 2, 4-bisdioxide). $SO_2OCH_2CH_2SO_2O$; m.w. 188.15;

deliq. cr.; m.p. 80.

ethocain. See procaine, hydrochloride.

Ethocel. Ethyl cellulose.

ethoxyamine (a-ethylhydroxylamine). $C_2H_5ONH_2$; m.w. 61.06; col. liq.; b.p. 68; s.w.; s.al.

ethyl acetate. See acetic acid, ethyl ester.

ethyl acetate glycolate. See glycolic acid, ethyl ester, acetate.

ethyl acetoacetate. See acetoacetic acid, ethyl ester.

ethyl alcohol (ethanol; methylcarbinol; alcohol; spirit of wine). CH_3CH_2OH; m.w. 46.05; col. liq.; m.p. −117.3; b.p. 78.5; s.w.

ethyl alcohol, d-amino. See acetaldehyde-ammonia.

ethyl alcohol, pentamethyl-. See 2-butanol, 2, 3, 3-trimethyl-.

ethyl aldehyde. See acetaldehyde.

ethylamine (aminoethane). $C_2H_5NH_2$; m.w. 45.06; m.p. −80.6; b.p. 16.6; s.w.

ethylamine, N-benzal- (N-ethyl benzalimine; N-benzylideneethylamine). $C_6H_5CH{:}NC_2H_5$; m.w. 133.09; b.p. 195; i.w.; s.al.

ethylamine, β, β-diethoxy- (aminoacetal; acetalylamine). $(C_2H_5O)_2CHCH_2NH_2$; m.w. 133.13; liq.; b.p. 163; s.w.; s.al.

ethylamine, β, β-diethoxy-N, N-dimethyl- (dimethylaminoacetal). $(CH_3)_2NCH_2CH(OC_2H_5)_2$; m.w. 161.16; yel. liq.; b.p. 170-1; s.w.; s.al.

ethylamine, α, α-dimethyl-. See tert-butylamine.

ethylamine, β-ethoxy- (β-aminoethyl ethyl ether). $C_2H_5OCH_2CH_2NH_2$; m.w. 89.09; liq.; b.p. 108; s.w.; s.al.

ethylamine, β-ethoxy-N-methyl- (ethyl β-methylaminoethyl ether). $CH_3NHCH_2CH_2OC_2H_5$; m.w. 103.11; liq.; b.p. 114-5 ^{744}.

ethylamine, hydrobromide (ethylammonium bromide). $C_2H_5NH_2 \cdot HBr$; m.w. 125.99; m.p. 159.5.

ethylamine, hydrochloride (ethylammonium chloride). $C_2H_5NH_2 \cdot HCl$; m.w. 81.53; monocl. deliq. leaf.; m.p. 109; s.w.; s.al.

ethylamine, β-hydroxy-. See ethanol, 2-amino-.

ethylamine, β-hydroxy-N, N-dimethyl-. See ethanol, 2-bimethylamino-.

ethylamine, β-hydroxy-N-methyl-. See ethanol, 2-methylamino-.

ethylamine, α-phenyl-. See benzylamine, α-methyl-.

ethylamine, β-phenyl-. See phenethylamine.

ethylaniline. See aniline, N-ethyl-.

ethyl arsenate (triethyl arsenate; ethyl orthoarsenate). $(C_2H_5)_3AsO_4$; m.w. 226.05; b.p. 238.

ethyl arsenite (triethyl arsenite; ethyl orthoarsenite). $(C_2H_5)_3AsO_3$; m.w. 210.05; b.p. 166.

ethylation. The process of introducing the ethyl radical into compounds.

ethyl benzoate. See benzoic acid, ethyl ester.

ethyl benzoyl benzoate, ortho-. $C_6H_5COC_6H_4COOC_2H_5$; wh. cryst. solid; m.p. 56-58; b.p. 325; i.w., s.al.; used as a plasticizer.

ethyl borate (triethyl borate; triethoxyboron). $B(OC_2H_5)_3$; m.w. 145.94; col. liq.; b.p. 120; s.al.

ethyl bromide (bromoethane). CH_3CH_2Br; m.w. 108.96; col. liq.; m.p. −119; b.p. 38.0; s.al.

ethyl bromide, vinyl-. See 1-butene, 4-bromo-.

ethyl butyl acetate. See 1-butanol, 2-ethyl-, acetate.

ethyl butyrate. See butyric acid, ethyl ester.

ethyl cellulose. A non-inflammable, white granular material used in films, lacquers, plastics, and for textile finishing.

ethyl chloride (chloroethane). CH_3CH_2Cl; m.w. 64.50; col. liq. or gas; m.p. −138.7; b.p. 12.2; s.al.

ethyl chlorocarbonate. See formic acid, chloro-, ethyl ester.

ethyl cinnamate, β-ketohydro-. See acetic acid, benzoyl, ethyl ester.

ethyl crotonate. See crotonic acid, ethyl ester.

ethyl cyanide. See propionitrile.

ethyl disulfide (ethyldithioethane; diethyl disulfide). $(C_2H_5)_2S_2$; m.w. 122.20; oil; b.p. 153-4; s.w.; s.al.

ethylene (ethene, elayl). $CH_2{:}CH_2$; m.w. 28.03; col. gas; m.p. −169.4; b.p. −103.9; s.w.; s.al.

ethylene series. Hydrocarbons, containing one double-bond, having the general formula, C_nH_{2n}, e.g. ethylene, C_2H_4.

ethylene bromide (1, 2-dibromoethane; ethylene dibromide; glycol dibromide). CH_2BrCH_2Br; m.w. 187.86; col. liq.; m.p. 9.97; b.p. 131.6; s.al.

ethylene, bromo-. See vinyl bromide.

ethylene bromohydrin. See ethanol, 2-bromo-.

ethylene, 1-bromo-2-phenyl-. See styrene, β-bromo-.

ethylene, butyl-. See 1-hexene.

ethylene, sec-butyl-. See 1-pentene, 3-methyl-.

ethylene, tert-butyl-. See 1-butene, 3, 3-dimethyl-.

ethylene, 1-butyl-1-methyl-. See 1-hexene, 2-methyl-.

ethylene, 1-butyl-2-methyl-. See 2-heptene.

ethylene, 1-sec-butyl-1-methyl-. See 1-pentene, 2, 3-dimethyl-.

ethylene, 1-sec-butyl-2-methyl-. See 2-hexene, 4-methyl-.

ethylenecarboxylic acid. See acrylic acid.

ethylene chloride (1, 2-dichloroethane; ethylene dichloride; glycol dichloride). CH_2ClCH_2Cl; m.w. 98.95; col. liq.; m.p. −35.3; b.p. 83.5-3.7; s.al.

ethylene, chloro-. See vinyl chloride.

ethylene chlorobromide. See ethane, 1-bromo-2-chloro-.

ethylene chlorohydrin. See ethanol, 2-chloro-.

ethylene cyanide. See succinonitrile.

ethylene cyanohydrin. See hydracrylonitrile.

ethylenediamine (anh.) (1, 2-ethanediamine). $NH_2CH_2CH_2NH_2$; m.w. 60.08; col. liq.; m.p. 8.5; b.p. 116.1; s.w.

ethylenediamine (hydrate). $NH_2CH_2CH_2NH_2 \cdot H_2O$; m.w. 78.09; col. liq.; m.p. 10; b.p. 118.

ethylenediamine, n, n'-diphenyl- (sym-diphenylethylenediamine; ethylenediphenyldiamine). $C_6H_5NHCH_2CH_2NHC_6H_5$; m.w. 212.14; col leaf. f.dil.al.; m.p. 65; i.w.; s.al.

ethylenediamine, hydrochloride (ethylenediammonium chloride). $HCl \cdot NH_2CH_2CH_2NH_2 \cdot HCl$; m.w. 133.01.

ethylene, 1, 2-dibromo- (acetylene dibromide, sym-dibromoethylene). $CHBr{:}CHBr$; m.w. 185.85; col. liq.; m.p. cis 53, trans 6.5; b.p. cis 110^{764}; trans 108; i.w.; s.al.

cis-1, 2-ethylenedicarboxylic acid. See maleic acid.

trans-1, 2-ethylenedicarboxylic acid. See fumaric acid.

1, 1-ethylenedicarboxylic acid, 2-phenyl-. See malonic acid, benzal-.

ethylene dichloride. See ethylene chloride.

ethylene, 1, 1-dichloro- (uns-dichloroethylene). $CH_2{:}CCl_2$; m.w. 96.93; liq.; b.p. 37; i.w.

ethylene, 1, 2 (or sym)-dichloro- (acetylene dichloride). $CHCl{:}CHCl$; m.w. 96.93; cis: liq.; m.p. −50; b.p. 48.4; trans: liq.; m.p. −80.5; b.p. 60.3; i.w.; s.al.

ethylene, 1, 1(or uns)-diethyl-. See 1-butene, 2-ethyl-.

ethylene, 1, 2(or sym)-diethyl-. See 3-hexene.

ethylene, 1, 1-methyl-2-methyl-. See 2-pentene, 3-ethyl-.

ethylene diiodide. See ethylene iodide.

ethylene, 1, 2(or sym)-diisopropyl-. See 3-hexene, 2, 5-dimethyl-.

ethylene dimercaptan. See 1, 2-ethanedithiol.

ethylene, 1, 1(or uns)-dimethyl-. See propene, 2-methyl-.

ethylene, α, α-dimethyl- (1, 2-epoxy-2-methylpropane; isobutylene oxide). $CH_2C(CH_3)_2O$; m.w. 72.06; b.p. 51-2;

s.al.

ethylene, sym-dimethyl-. See 2-butene.

ethylene, 1, 1-dimethyl-2-propyl-. See 2-hexene, 2-methyl-.

ethylene, 1, 2-dimethyl-1-propyl-. See 2-hexene, 3-methyl-.

ethylene, 1, 1-diphenyl- (uns-diphenylethylene). $(C_6H_5)_2C{:}CH_2$; m.w. 180.09; col. liq.; m.p. 9; b.p. 277.

ethylene, trans-1, 2-diphenyl-. See stilbene.

ethylenediphenyldiamine. See ethylenediamine, N, N'-diphenyl-.

ethylene diphenyl ether. See ethane, 1, 2-diphenoxy-.

ethylenedisulfonic acid. See 1, 2-ethanedisulfonic acid.

ethylene, esters. See "diacetate," "dibenzoate," etc. under glycol.

ethylene, ethyl-. See 1-butene.

ethylene, 1-ethyl-1, 2-dimethyl-. See 2-pentene, 3-methyl-.

ethylene, 2-ethyl-1, 1-dimethyl-. See 2-pentene, 2-methyl-.

ethylene ethylidene ether. See 1, 3-dioxolane, 2-methyl-.

ethylene, 1-ethyl-1-isobutyl-. See 1-butene, 2-ethyl-3-methyl-.

ethylene, 1-ethyl-2-isopropyl-. See 3-hexene, 2-methyl-.

ethylene, 1-ethyl-1-methyl-. See 1-butene, 2-methyl-.

ethylene, 1-ethyl-2-methyl-. See 2-pentene.

ethylene, 1-ethyl-1-propyl-. See 1-pentene, 2-ethyl-.

ethylene, 1-ethyl-2-propyl-. See 3-heptene.

ethylene, ethyltrimethyl-. See 2-pentene, 2, 3-dimethyl-.

ethylene glycol. See glycol.

ethylene glycol ether. See ethanol, 2-methoxy-.

ethylene glycol ether, acetate. See ethanol, 2-methoxy-, acetate.

ethylene glycol monobutyl ether. See ethanol, 2-butoxy-.

ethylene glycol monoethyl ether. See ethanol, 2-ethoxy-.

ethylene glycol monoethyl ether acetate. See ethanol, 2-ethoxy-, acetate.

ethylene glycol monomethyl ether. See ethanol, 2-methoxy-.

ethylene glycol monomethyl ether acetate. See ethanol, 2-methoxy-, acetate.

ethylene imine. See ethylenimine.

ethylene iodide (1, 2-diiodoethane; ethylene diiodide; glycol diiodide). CH_2ICH_2I; m.w. 281.87; yel. monocl. pr.f.et.; m.p. 81-2; s.w.; s.al.

ethylene, iodo-. See vinyl iodide.

ethylene, isoamyl-. See 1-hexene, 5-methyl-.

ethylene, isobutyl-. See 1-pentene, 4-methyl-.

ethylene, 1-isobutyl-1-methyl-. See 1-pentene, 2, 4-dimethyl-.

ethylene, 1-isobutyl-2-methyl-. See 2-hexene, 5-methyl-.

ethylene, isopropyl-. See 1-butene, 3-methyl-.

ethylene, 1-isopropyl-1, 2-dimethyl-. See 2-pentene, 3, 4-dimethyl-.

ethylene, 2-isopropyl-1, 1-dimethyl-. See 2-pentene, 2, 4-dimethyl-.

ethylene, 1-isopropyl-1-methyl-. See 1-butene, 2, 3-dimethyl-.

ethylene, 1-isopropyl-2-methyl-. See 2-pentene, 4-methyl-.

ethylene lactic acid. See hydracry acid.

ethylene mercaptan. See 1, 2-etha dithiol.

ethylene, methyl-. See propene.

ethylene, 1-methyl-1-phenyl-. benzene, isopropenyl-.

ethylene, 1-methyl-1-propyl-. See pentene, 2-methyl-.

ethylene, 1-methyl-2-propyl-. See hexene.

ethylene nitrate. See glycol, dinitra

ethylene nitrite. See glycol, dinitri

ethylene oxide (1, 2-epoxyethan oxirane). $(CH_2)_2O$; m.w. 44.03; c liq. or gas.; m.p. −111.3; b.p. 10 s.w.; s.al.

ethylene, perchloro-. See ethyle tetrachloro-.

ethylene, phenyl-. See styrene.

ethylene, propyl-. See 1-pentene.

ethylene, pseudobutyl-. See 1-buten 3, 3-dimethyl-.

ethylene, tetrabromo-. C_2Br_4; m. 343.66; m.p. 57.5; b.p. 227.

ethylene, tetrachloro- (perchloroethy ene). $CCl_2{:}CCl_2$; m.w. 165.83; c liq.; sp.gr. 1.623; m.p. −22.35; b. 121.20; i.w.; s.al.

ethylene, tetraiodo-. $CI_2{:}CI_2$; m. 531.68; yel. monocl. pr.; m.p. 18 i.w.; s.al.

ethylene, tetramethyl-. See 2-buten 2, 3-dimethyl-.

ethylene tetraphenyl-. $(C_6H_5)_2C C(C_6H_5)_2$; m.w. 332.16; col. monoc or rhomb. f. bz.; m.p. 227; b.p. 42 i.w.; s.al.

ethylene, tribromo- (ethinyl tribromide $CHBr{:}CBr_2$; m.w. 264.76; liq.; b. 163-4.

ethylene, trichloro- (ethinyl trichloride $CHCl{:}CCl_2$; m.w. 131.38; col. liq m.p. −73; b.p. 87; s.al.

ethylene, trimethyl-. See 2-buten 3-methyl-.

ethylene, triphenyl- (a-phenylstilbene $(C_6H_5)_2C{:}CHC_6H_5$; m.w. 256.12; na row leaf. f.al. or ac.a.; m.p. 72- b.p. 220-1 ^{14}; i.w.; s.al.

ethylene, vinyl-. See 1, 3-butadiene.

ethylenimine (dimethylenimine; dihydr azirine). $NHCH_2CH_2$; m.w. 43.0

oil; b.p. 55-6; s.w.; s.al.

ethyl ether (ethoxyethane; diethyl ethe ether; ethyl oxide; sulfuric ether $C_2H_5OC_2H_5$; m.w. 74.08; col. li or rhomb.; m.p. −116.2; b.p. 34. s.al.

ethyl ether, dichloro-. See ether, bi chloroethyl.

ethyl fluoride (fluoroethane). CH CH_2F; m.w. 48.04; gas; b.p. −3 s.w.; s.al.

ethyl formate. See formic acid, eth ester.

ethyl 2-furoylacetate. See acetic aci pyromucyl-, ethyl ester.

2-ethyl hexoic acid. See caproic aci a-ethyl-.

2-ethylhexyl chloride. See hexan chloro-2-ethyl-.

ethyl hydrogen sulfate. See ethy sulfuric acid.

ethyl hydrosulfide. See ethanethiol.

ethylidine aniline. See aniline, ethy idine.

ethylidene bromide. See ethane, 1-dibromo-.

ethylidene chloride. See ethane, 1-dichloro-.

ethylidene cyanohydrin. See lacta nitrile.

ethylidene diethyl ether. See acetal.

ethylidene glycol, tribromo-. Se bromal, hydrate.

ethylidene glycol, trichloro-. See chlora hydrate.

ethylidine iodide. See ethane, 1, diiodo-.

N-ethylidene-N'-phenylhydrazine. Se acetaldehyde, phenylhydrazone.

ethyl iodide (iodoethane). CH_3CH_2 m.w. 155.96; col. liq.; m.p. −108. b.p. 72.2; s.al.

ethyl isocyanide (ethylcarbylamine C_2H_5NC; m.w. 55.05; col. liq.; m.

< −66; b.p. 79; s.w.; s.al.

yl ketone. See 3-pentanone.

yl lactate. See lactic acid, ethyl ester.

yl malonic acid. See malonic acid, ethyl-.

yl mercaptan. See ethanethiol.

yl methyl ketone. See 2-butanone.

yl monobromacetate. See acetic acid, bromo-, ethyl ester.

yl monochloracetate. See acetic acid, chloro-, ethyl ester.

hyl mustard oil. See isothiocyanic acid, ethyl ester.

hyl nitrate (nitric ether). $C_2H_5ONO_2$; m.w. 91.05; col. inflam. liq.; m.p. −102; b.p. 88.7; s.al.

hyl nitrite (nitrous ether). C_2H_5ONO; m.w. 75.05; col. or yelsh. liq.; b.p. 17; s.w.; s.al.

hyloglycolic acid. See acetic acid, ethoxy-.

hylolamine. See ethanol, 2-amino-.

thyl orthoarsenate. See ethyl arsenate.

thyl orthoarsenite. See ethyl arsenite.

thyl orthosilicate. $(C_2H_5)_4SiO_4$; m.w. 208.22; col. liq.; sp.gr. .9357; b.p. 165.5; s.al.; i.w.

thyl oxalate. See oxalic acid, diethyl ester.

thyl oxide. See ethyl ether.

thyl oxybutyrate. $(CH_3)_2COHCOOC_2H_5$; colorl. liq.; sp.gr. 0.978-0.986; b.p. 144-146; s.al.; solvent for cellulose acetate and cellulose nitrate; used in organic synthesis.

thyl phosphate (triethyl phosphate). $(C_2H_5)_3PO_4$; m.w. 182.14; liq.; b.p. 216; s.al.

thyl phosphite (triethyl phosphite). $(C_2H_5)_3PO_3$; m.w. 166.14; col. liq.; b.p. 156.5; i.w.; s.al.

thyl phthalyl ethyl glycolate. $C_6H_4(COOC_2H_5)\cdot COOCH_2COOC_2H_5$; slightly colored bitter liq.; sp.gr. 1.177; b.p. 190 [5]; crystallization pt. 20° C.; s.w.; a solvent plasticizer for cellulose acetate and nitrate.

ethyl propionate. See propionic acid, ethyl ester.

ethyl selenide. Diethyl selenide.

ethyl silicate. See ethyl orthosilicate.

ethyl sulfate (diethyl sulfate). $(C_2H_5)_2SO_4$; m.w. 154.14; col. oily. liq.; m.p. −26.

ethyl sulfide (ethylthioethane; diethyl sulfide). $(C_2H_5)_2S$; m.w. 90.14; col. liq.; m.p. −102.1; b.p. 92; s.al.

ethylsulfinic acid. See ethanesulfinic acid.

ethyl sulfite (diethyl sulfite). $(C_2H_5)_2SO_3$; m.w. 138.14; col. liq.; b.p. 158; s.al.

ethyl sulfone (ethyl sulfonylethane; diethyl sulfone). $(C_2H_5)_2SO_2$; m.w. 122.14; rhomb. pl.; m.p. 73-4; b.p. 248; s.w.

ethylsulfonic acid. See ethanesulfonic acid.

ethyl sulfoxide (ethylsulfinylethane; diethyl sulfide). $(C_2H_5)_2SO$; m.w. 106.14; syrupy liq.; m.p. 5; s.w.; s.al.

ethylsulfuric acid (ethyl hydrogen sulfate; acid ethyl sulfate). $C_2H_5OSO_3H$; m.w. 126.11; col. oily. liq.; s.w.; s.al.

ethyl telluride (tellurium ethyl; diethyl telluride). $(C_2H_5)_2Te$; m.w. 185.58; red-yel. liq.; b.p. 138; i.w.; s.al.

ethyl thioalcohol. See ethanethiol.

ethyl valerate. See valeric acid, ethyl ester.

ethyl, vinyl-. See 1-butene, 4-bromo-.

ethyne. See acetylene and corresponding derivatives.

ethynyl bromide. See acetylene, bromo-.

etiology. Science of the causes of disease.

Ettinghausen effect. Temperature difference generated between two edges of a metal strip with an electric current flowing longitudinally in it, when it cuts across a magnetic field perpendicularly.

α-eucaine. $C_{18}H_{27}NO_4$; m.w. 333.22; shining pr. cr.; m.p. 103-5.

β-eucaine (benzamine; betacaine). $C_{18}H_{21}NO_2$; m.w. 247.17; wh. cr. m.p. 78.

α-eucaine, hydrochloride. m.w. $C_{18}H_{27}NO_4HCl\cdot H_2O$; m.w. 387.70; rosettes fr. sm. cr.; s.w.; s.al.

β-eucaine, hydrochloride. $C_{18}H_{21}NO_2\cdot HCl$; m.w. 283.64; wh. pl. or pr.; s.w.

β-eucaine, lactate (4-benzoxy-2, 2, 6-trimethylpiperidine lactate; benzamide lactate; benzoylvinyldiacetonealkamine lactate). $C_{18}H_{21}NO_2\cdot C_3H_6O_3$; m.w. 337.22; col. cr.; s.w.; s.al.

eucalyptole. See cineole.

eucalyptus kino (eucalyptus gum; Australian kino). A red gum derived from eucalyptus trees; s.w.; s.al.; used in medicine.

euclase. See beryllium aluminum silicate.

euclasite. A mineral, $Be(AlOH)SiO_4$: monocl., col., pa. grn., blue; sp.gr. 3.051-3.103; hardness 7.5.

eucolloid. Highly polymerized substance (degree of polymerization over 1000) whose solid is very tough and hard and whose solutions are very viscous.

udialite. A mineral, $6Na_2O\cdot 6(Ca,Fe)O\cdot 20(Si,Zr)O_2\cdot NaCl$; hex., red to br., sp.gr. 2.8-3.1; hardness 5-6.

eudiometer. A long, graduated glass tube used in the analysis of gases.

eugenic acid. See eugenol.

eugenol (4-allylguaiacol; eugenic acid). $CH_2{:}CHCH_2C_6H_3(OCH_3)OH$; m.w. 164.09; col. liq.; m.p. 10.3; b.p. 252-3; s.w.; s.al.

eugenol, methyl-. See veratrole, 4-allyl-.

eugenol, methyl ether. See veratrole, 4-allyl-.

eugetic acid (5-allyl-3-methoxysalicylic acid; eugetinic acid; $C_3H_5C_6H_2(OCH_3)(OH)COOH$; m.w. 208.09; pr.f.w.; m.p. anh. 127; s.w.; s.al.

Eulan. The trade name of certain mothproofing preparations.

eulytite. A mineral, $3SiO_2\cdot 2BiO_3$; cub., br. to yel. or col.; sp.gr. 6.106; hardness 4.5.

eunatrol. See sodium oleate.

eupittone (hexamethoxyaurin; eupittonic acid). $C_{19}H_8(OCH_3)_6O_3$; m.w. 470.20; or. need. f.al.; s.al.

euresol. See resorcin monoacetate.

europium. Eu; m.w. 152.0; valence 2 or 3; a metallic element, the most sparsely distributed of the terbium family of rare earths, which includes europium, gadolinium and terbium, of properties resembling those of the cerium family.

europium chloride. $EuCl_3$; m.w. 258.37; fine yel. need.; m.p. 623±2.

europium oxide. Eu_2O_3; m.w. 352.00; pa. rose powd.; s.g. 7.42 fr. oxal., 6.55 fr. nit.

europium sulfate. $Eu_2(SO_4)_3\cdot 8H_2O$; m.w. 736.30; pa. rose cr.; m.p. $-8H_2O$; 375.

eutectic. Mixture or solution, such that all of its ingredients solidify or liquefy simultaneously; the lowest point in the freezing or melting point of a mixture of two substances.

eutectoid. Solid solution, (similar to a eutectic) which separates into constituents upon solidification.

euxamite. A radioactive radium mineral found in Brazil.

euxanthic acid. $C_{19}H_{16}O_{10}\cdot 3H_2O$; m.w. 458.17; pa. yel. need.; s.w.; s.al.

euxanthone (1, 7-dihydroxyxanthone). $HOC_6H_3(CO)(O)C_6H_3OH$; m.w. 228.06; yel. need.; m.p. 240; i.w.; s.al.

euxanthone, 3-methoxy-. See gentisin.

euxenite. Columbate and titanate of yttrium, cerium, erbium, uranium, thorium and zirconium, br.-blk.; sp.gr. 4.7-5.0.

evaporated molasses residue. See curbay binder.

evaporation. Change from the liquid to the gaseous state with the adsorption of heat.

evaporator, multiple effect. A series of evaporator bodies so connected that the vapor from one is the heating medium of the next.

evaporimeter. An instrument for measuring the rate of evaporation of a liquid.

Eve constant. Number of ions formed per c.c. per second in air at normal conditions, 1 cm. from a source of radium in equilibrium with 1 curie of radon.

evernic acid (orsellinic acid 4-everninate; lecanoric acid monomethyl ether). $C_{17}H_{16}O_7$; m.w. 332.12; need. or pr.f.al.; s.w.; s.al.

everninic acid (2-hydroxy-6-methylanisic acid; orsellinic acid 4-methyl ether). $CH_3OC_6H_2(OH)(CH_3)COOH$; m.w. 182.08; cr.f.w.; s.w.; s.al.

d-evodiamine. $C_{19}H_{17}N_3O$; m.w. 303.16; yel. leaf.; m.p. 278.

i-evodiamine (hydrate). $C_{19}H_{17}N_3O\cdot H_2O$; m.w. 321.17; rhomb. leaf.; m.p. 146-7.

evolute. Locus of centers of curvature.

evolution. Process of finding the root of a number; a theory in biology dealing with the inheritance and variations of characteristics so that all organisms are genetically related to preëxisting forms.

exalgin. See acetanilide, N-methyl-.

excitation function. Probability of excitation of a spectrum line because of electronic collision given as a function of electronic energy.

excitation limit. Smallest amount of quantum energy of an incident, exciting electron, capable of forming lines of a certain spectral series.

exciter. Small d.c. generator supplying current for the alternator field.

exciton. State of excitation moving from one atom to another in a material body.

exclusion principle. See Pauli's exculsion principle.

exo-enzyme. Enzyme secreted by cell in media outside of cell.

exogenous. Plants which grow by successive concentric rings under bark.

Exolon. An abrasive, made in the electric furnace.

exosmosis. The osmotic equilibrium reached by two liquids separated by a porous diaphragm.

exothermic. Referring to the giving off of heat in a chemical reaction.

explosive. Material which, when detonated, very rapidly decomposes into gaseous products. The force developed increases with the number of molecules of gas, the temperature produced and the speed of the reaction.

explosive, permissable. An explosive which can pass certain tests prescribed by the U. S. Bureau of Mines; can be safely used in gassy and dusty mines.

explosive, safety. Explosive which requires a powerful initial impulse, therefore, may be handled safely under ordinary conditions.

exponent. Small number written to right and above another number to indicate how many times the number is multiplied by itself, e.g. x^3.

extender. Inert material serving as a diluent.

extinction coefficient. Extinction or density for a centimeter layer of absorbing medium, directly proportional to the concentration of a solution (Beer's law being true).

Extol. A detergent used in the textile industry consisting of a sulfated compound with solvents.

Exton bristles. Chemical bristle filaments used in tooth and toilet brushes made by forcing a plastic polymer thru holes much as viscose rayon is made; not softened by water or saliva.

extra. Prefix meaning outside.

extract. The concentrated preparation obtained from drugs, etc.

extract, fluid. Concentrated liquid drug extract.

extraction. The method by which the soluble parts of a substance are separated from the substance.

extraneous root. See root, extraneous.

extrapolate. Estimation of values of a function for variable values outside the range of known values.

extrusion molding. Procedure whereby a heat-softened substance is forced thru an orifice of form coinciding with the cross section of the article.

F

F acid. 2-naphthol-7-sulfonic acid and 2-naphthylamine-7-sulfonic acid. Used in making dyes.

f-electron. Orbital electron of energy state indicated by azimuthal quantum number 3.

f-value. Atom form factor (q.v.) referring to center of atom or lattice point corresponding to atom.

Fabrikoid. An American cotton preparation which is used as a substitute for such materials as ivory, rubber, leather, and amber.

Fabroil. Synthetic tar-acid resin.

Fabrolite. Synthetic tar-acid resin for molding and laminating.

facellite. See kaliophilite.

factice (factis). A term used for rubber substitutes prepared from oils.

factice, black. Brown factice containing some mineral rubber.

factor of safety. The ultimate strength of a material divided by actual unit stress on a sectional area.

fading. Varying of signal strength in radio reception.

fading test. Test used to determine fastness of colors to light.

fadometer. Device for testing colors for fastness to light.

fahlerz. See tetrahedrite.

Fahrenheit. A temperature scale where the freezing point of water is 32° and the boiling point of water is 212°. It is the temperature scale used in English speaking countries for other than scientific work.

fakes. Solutions of waxes in volatile solvents for application to edges, heels and bottoms of shoes.

false-body. Heavy or viscous consistency where solid material content is low.

famatinite. $3Cu_2S \cdot Sb_2S_5$; a grayish mineral with a brownish-red tinge resembling freshly fractured bornite.

faraday. A unit representing a quantity of electricity, 96,500 coulombs (absolute). That quantity of electricity which will deposit one electro-chemical equivalent in grams.

farad, absolute. A unit of electrical capacitance. The capacity of a conductor which would have its potential raised one volt by adding a charge of one coulomb.

Faraday effect. Rotation of polarized light by an otherwise isotropic medium in a magnetic field having same direction as the light beam.

Faraday's laws of electrolysis. See electrolysis, laws of.

farinaceous. Starchy.

Fasig test. Measure of oil absorption of pigments.

fat. Naturally occurring mixture of triglycerides (q.v.), e.g. tallow; pertaining to mixture containing an excess of an ingredient.

fat clay (ball clay). Certain white-burning clays consisting mainly of aluminum silicate; they are very plastic, tough and fine-grained; used in terra cotta, stone ware, white ware, and as a flotation agent for glassy frit in vitreous porcelain enamels.

fat hardening. The production of solid fats by treatment with hydrogen in the presence of a catalyst. See hydrogenation.

fat-liquor. An emulsion used for introducing oils or fats into leather for softening and preserving it.

fat-liquoring. Incorporation of an oil or fat emulsion into leather to make it soft and pliable.

fat-soluble vitamins. The vitamins soluble in fats and oils and found associated therewith, viz. vitamins A, D and E.

fatigue. Gradual change or decrease of a certain property because of external action.

fatigue limit. See fatigue strength.

fatigue strength (fatigue limit). Range of stress that an elastic material will stand a number of successive times without failure.

fatty acid. Organic acid of the general formula $C_nH_{2n}O_2$, e.g. acetic acid and stearic acid; organic acids of aliphatic or open-chain structure.

fatty acid, vegetable. See vegetable fatty acid.

fatty oil. Fat which is liquid at ordinary temperatures.

Faturan. Synthetic tar-acid resin.

fault. Displacement of rocks on one side of a joint plain, or fissure, relative to those on the opposite side.

fayalite. A mineral, Fe_2SiO_4; rhomb., yel.-blk.; sp.gr. 3.91-4.34; hardness 6.5.

feather ore. See jamesonite.

febrifuges. See antipyretics.

Fechner's law. Differences of 2% in coefficient of reflection, under moderate illumination, are not discernible to the average eye.

Feculose. Proprietary name for a starchy product obtained by treating dry starch with glacial acetic acid; an excellent substitute for gelatine and gums; used in textile finish, linen and silk, dyeing, paper coating, confectionery.

Fedorov co-ordinates. Intervals along Cartesian co-ordinate axes to projections of a given point in space upon those axes.

feed stuffs (feeding stuffs). The materials used as food for live stock. They depend for their value upon nitrogenous matter, oil or fat, carbohydrates, and mineral constituents.

Fehling's solution. A test solution used for detection of reducing sugars, especially glucose. It consists of two solutions which are mixed immediately before use, solution "A" containing copper sulfate and solution "B" an alkaline tartrate solution made with Rochelle salts.

feldspars. A family of anhydrous silicates comprising much of the earth's crust, having the general formula $(R'R'')(Al, Si)_4O_8$, R' representing potassium or sodium, R'' calcium or sometimes barium. Members of the groups are orthoclase, microline, albite, labradorite, andesine, anorthoclase, and anorthite (q.v.).

femic. Rich in ferromanganese minerals.

6-fenchanol. See isofenchyl alcohol.

2-fenchanone. See fenchone.

l-α-fenchene (l-7, 7-dimethyl-2-methylenenorcamphane). $C_{10}H_{16}$; m.w. 136.12; liq.; b.p. 158; i.w.; s.al.

d-fenchone (d-2-fenchanone; d-1, 3, 3-trimethyl-2-norcamphanone; fenchone). $C_{10}H_{16}O$; m.w. 152.12; oil.; m.p. 6; b.p. 193-5; i.w.; s.al. A ketone isomeric with camphor found in fennel oil, and in thuja oil in the levo- form.

fennel oil. See oil, fennel.

fenugreek. The seeds of Trigonella, used in medicine and veterinary medicine.

ferberite. A mineral, $FeWO_4$; monocl., brn. to blk.; sp.gr. 6.801-7.109; hardness 4.0-4.5.

fergusonite. A rare mineral, occurring in the United States, Norway, and Sweden, a columbate and tantalate of yttrium with erbium, cerium, and uranium.

Fermat principle. When light passes from one point to another, the time of passage is either a maximum or minimum with respect to other adjacent, arbitrary paths.

ferment, digestive. Enzyme aiding digestion, e.g. pepsin.

fermentation. Decomposition of carbohydrates by microorganisms.

Fermine. Methyl phthalate.

ferrate. Compounds corresponding to the manganates but containing iron instead of manganese, e.g. potassium ferrate K_2FeO_4.

ferric. Designation for iron salts where the iron is trivalent, e.g. $FeCl_3$, ferric chloride.

ferric compound. See corresponding *Iron* compound.

ferricyanide. Complex salt containing the $Fe(CN)_6^{'''}$ ion, e.g. potassium ferricyanide, $K_3Fe(CN)_6$.

Ferrisul. Ferric sulfate.

ferrite. Iron, in pig iron or steel, which has not combined with the carbon to form cementite; designation for compounds of ferric oxide with other more basic oxides, e.g. zinc ferrite, $Fe_2O_3 \cdot ZnO$.

ferro alloy. Alloy of iron and one or more other metals, e.g. ferromanganese.

ferrocyanide. Compound containing the quadrivalent radical $Fe(CN)_6$, e.g. potassium ferrocyanide, $K_4Fe(CN)_6$.

ferromanganese. An alloy of iron and 70 to 80% manganese used to introduce manganese into a molten charge or iron and for the removal of oxygen from steel. Manganese steels are very tough and hard; sp.gr. 7.0; m.p. 1325.

ferromolybdenum. An alloy of iron and molybdenum. Molybdenum increases the elastic limit of steel and permits higher tempering temperatures.

Ferron. Co-precipitated iron oxide and calcium sulfate, a building material.

ferronickel alloys. Definite alloys of iron and nickel used in making alloys with very low coefficients of thermal expansion, e.g. Invar and platinite.

ferrophosphorus. An alloy of iron and phosphorus used to rephosphorize steel.

ferrosilicon. A somewhat brittle alloy of iron and silicon, the silicon content varying very widely; used as an acid-resistant material in place of glass, for making hydrogen, as a deoxidizing agent, and for addition of silicon to steel.

ferrotitanium. An alloy of iron of titanium used as a deoxidizer and scavenger in steels.

ferrotungsten. An alloy of iron and tungsten, of great hardness and toughness, even at high temperatures.

ferrous. Designation for iron salts in which the iron is divalent, e.g. ferrous chloride, $FeCl_2$.

ferrous compound. See corresponding *Iron* compound.

ferrovanadium. A steel containing vanadium, the latter introduced to remove occluded oxygen and nitrogen and give tensile strength to the steel.

Ferrozell. Synthetic tar-acid resin.

ferruginous. Containing iron, e.g. natural mineral waters, which may act as tonics; chalybeate waters.

ferrum reductum. See iron, reduced.

fertilizer. Material added to the soil for the purpose of promoting plant life, usually containing nitrogen, potassium, and phosphorus, e.g. manure, guano, rock phosphates, etc.

fertilizer components, primary. Nitrogen, phosphoric acid and potash.

fertilizer components, secondary. Those other than primary fertilizer components (q.v.) essential to proper plant growth, e.g. calcium, magnesium, sulphur, manganese, copper, zinc, boron etc.

ferulic acid (4-hydroxy-3-methoxy-cinnamic acid). $HO(OCH_3)C_6H_3CH{:}CHCOOH$; m.w. 194.08; rhomb. need. f.w.; m.p. 168; s.w.; s.al.

fiber. A slender, elongated filament, as of rayon, silk or wool; a slender elongated cell like cotton or kapok; a slender strand composed of aggregations of elongated cells like flax, jute and sisal.

fiber stress. See stress.

fiber, vulcanized. See vulcanized fiber.

Fiberloid. A cellulose nitrate plastic, thermoplastic, available in rods, sheets, and lacquers, transparent opaque, colored and colorless forms, of good machining qualities; resistant to hydrocarbons and oils.

Fiberlon. A phenol formaldehyde, thermosetting resin, available in transparent translucent, and opaque, colored and colorless forms, of good machining qualities and excellent resistance to ketones, esters, hydrocarbons and oils.

fibers, hard or leaf. Comparatively stiff elongated strands from leaves or leaf stems of abaca, henequin, phormium, sisal, etc.

fibers, soft or bast. Flexible elongated strands from the inner bark of flax, hemp, jute, ramie, and others.

Fibestos. A cellulose acetate plastic, themoplastic, available in transparent, translucent, opaque, colored and colorless forms, of good molding and machining properties, slow burning, resistant to hydrocarbons and oils.

fibril. Extremely fine fiber- or cell-like mass formed during first stages of gel formation.

fibrin (syntonin). A constituent of the blood, of albuminoid nature, which separates out in a fibrous form during clotting or coagulation.

Fibroc. Synthetic tar-acid resin.

fibrolite. See sillimanite.

field. Space traversed by electric or magnetic lines of force.

field coil. Coil surrounding pole pieces of a motor.

field current. See field emission.

d emission (field current; autolectronic emission; cold emission). Emission of electrons by application of ntense electric fields.

r. Filamentous; thread-like.

ation capacity. Three-fourths of the atomic weight, of a radioactive atom, minus its atomic number.

xic acid. $C_{35}H_{40}O_{12}$; m.w. 652.31; cr.; m.p. 184; i.w.; i.al.

ed gold. See rolled gold.

ler. Cheap material giving body, strength or other properties to paints, plastics, textiles etc. See bulking agent.

ling. Materials used to give body and weight to textiles, e.g. starch or clay.

ling thread (pick; weft). Threads which run from side to side in cloths. The number of picks to the inch is used as a measure of weave in cotton cloth.

lm, monomolecular. See monolayer.

lter aid. Solid, finely divided material consisting of hard strong particles used to increase efficiency of filtering devices, e.g. kieselguhr.

lter cell. A proprietary name for an infusiorial filtering earth agent.

lter paper. A disc of porous paper used for separating liquids from solids.

lter press. A mechanical arrangement whereby an enormous area of filtering surface is provided by clamping a number of plates in a frame. The plates form a series of hollow spaces separated by filtering cloths.

ltrable virus. Designation for ultramicroscopic causative agents of disease, now believed to be complex proteins capable of catalyzing the production of more of their own substance in the presence of suitable living material.

ltration. The mechanical separation of finely divided solids from their associated liquids by means of porous media.

Filtros. A trade name for a porous acid-proof mineral substance which is essentially silica and is used as a filtering, diffusing, or aerating medium.

fine chemicals. Chemicals produced in relatively small quantities and whose use is in limited quantities, e.g. silver nitrate.

fine quantum number. Quantum number for quantization of resultant of the nuclear and extranuclear angular momenta.

fine structure. Occurrence of spectral lines as doublets, triplets etc.

finings. Isinglass solution, slightly acidified, added to beverages to carry down suspended matter.

Finsen lamp. Mercury vapor arc lamp used in testing resistance of coatings to actinic rays.

fire-clay. See clay, fire.

fire damp. An explosive methane and air mixture occurring in coal mines.

fire-point. Temperature at which a material begins to burn and continues burning.

fire-proof fabric. Fabric which chars but which does not carry a flame or glow after the igniting flame is removed.

firwood oil. See oil, pine needle.

Fischer's yellow. See cobalt potassium nitrite.

fisetin (3, 7, 3′, 4′-tetrahydroxyflavone). $HOC_6H_3OC[C_6H_3(OH)_2]C(OH)CO$; m.w. 286.08; yel. need.; m.p. 360; i.w.; s.al.

fish glue. Glue made from the bony structures of the heads of fishes; used for making adhesives, in finishing textiles, and in the preparation of certain rubber goods.

fish oil. See oil, fish.

fish oil soap. See soap, fish oil.

fish scrap. Fish carcasses which have been steam-cooked, and had their oil and water expressed; used as fertilizer and cattle and poultry feed.

fission, multiple. See sporulation.

Fittig synthesis. Reaction similar to the Wurtz reaction but applied to the aromatic compounds, e.g. $CH_3 \cdot C_6H_4 \cdot Br$ and C_2H_5Br treated with sodium produce $CH_3 \cdot C_6H_4 \cdot C_2H_5$ and sodium bromide.

fixation. Process of killing and coagulating a cell.

fixative. High boiling materials used in perfumes to slow down evaporation rate of volatile ingredients.

fixed carbon. See carbon, fixed.

fixed oil. See oil, fixed.

fixing agent. A chemical or mechanical agent that holds the mordant on the fibers or holds dyes and pigments on the fibers.

"fixing" nitrogen. Causing nitrogen of air to combine with other elements.

flagellum (pl. flagella). See cilium.

flake white. Flaked white lead ground in a drying oil.

flame coloration. Imparting of a distinct coloration to an otherwise colorless flame by introduction of certain compounds, e.g. barium salts cause an apple green coloring in the flame.

flame-proof fabric. Fabric which chars and continues to glow but does not carry a flame after the igniting flame is removed.

Flamenol. Synthetic vinyl resin.

flash distillation. See equilibrium distillation.

flash mold. A mold specially designed to allow an excess of molding material to escape while closing the mold.

flash point. The lowest temperature at which a substance or mixture in an open vessel gives off enough combustible vapors to produce a momentary flash of fire when a small flame is passed near its surface.

flashover strength, mean. Flashover voltage divided by flashover distance.

flask, chemical. Glass vessel usually having a round or conical body and a neck which can be grasped by a clamp; used to heat liquids.

flask, Erlenmeyer. See Erlenmeyer flask.

flat. Without gloss or luster; in optics, a mirror or piece of glass which has an optically flat surface.

flatting agent. Material added to a paint so that it will dry without a gloss; used on internal surfaces, or for an undercoating.

flatting oil. See oil, flatting.

flavaniline (2-[p-aminophenyl] lepidine). $NH_2C_6H_4C_9H_6N \cdot CH_3$; m.w. 234.13; col. pr.f.bz.; m.p. 97; s.w.; s.al.

flavanthrene, $C_{28}H_{12}O_2N_2$. An anthracene dyestuff forming a permanent yellow on unmordanted vegetable fibers; applied to the fibers in its deep-blue reduced form.

3, 5, 7, 3′, 4′-flavenpentol. See d-catechol.

flavescent. A white material which yellows on exposure or aging.

flavianic acid, histidine salt. See histidine, diflavianate.

flavin. Compound having the isoalloxazine nucleus.

flavol (2, 6-anthracenediol; 2, 6-anthradiol). $HOC_6H_3(CH)_2C_6H_3OH$; m.w. 210.08; yel. cr. powd. f.al.; i.w.; s.al.

flavone. A class of yellow plant pigments of which the parent substance is chromone.

flavone (2-phenylchromone; 2-phenyl-1, 4-benzo pyrone). $C_6H_4OC(C_6H_5):CHCO$; m.w. 222.08; col. f. lgr.; m.p. 97; i.w.; s.al.

flavone, 5, 7-dihydroxy-. See chrysin.

flavone, 3, 5, 7, 2′, 4′-pentahydroxy-. See morin.

flavone, 3, 5, 7, 3′, 4′-pentahydroxy-. See quercetin.

flavone, 3, 7, 3′, 4′-tetrahydroxy-. See fisetin.

flavopurpurin (1, 2, 6-trihydroxy-anthraquinone). $HOC_6H_3(CO)_2C_6H_2(OH)_2$; m.w. 256.06; yel. need. f.al.; m.p. >360; b.p. 459; s.w.; s.al.

flaws, primary. Flaws produced during growth of crystals.

flaws, secondary. Flaws produced after initial crystallization.

flax. A fiber made from the inner bark of the fiber flax plant, *Linum usitatissimum*. Its yarn and fabric are known as linen yarns and linen fabrics.

flaxseed. See linseed.

fleaseed. See psyllium seed.

Flectol A. Ketone amine; anti-oxidant.

Flectol B. A ketone amine product; viscous liquid; a rubber anti-oxidant.

Flectol H. A ketone amine product; resinous solid; a rubber anti-oxidant.

Flectol White. An aryl oxy ketone; white powder; a rubber anti-oxidant.

Fleming-Kennelly law. The reluctivity of a ferromagnetic material, as magnetic saturation is neared, is a linear function of the magnetic intensity.

Flexol plasticizer 3GO. $[(C_7H_{13}COO):C_2H_4(C_2H_4O_2)]$; a softening agent for natural and synthetic resins and used for increasing the elasticity of the plasticized product; b.p. 215 at 5 mm.

flexural moment. See bending moment.

flexural strength. Transverse strength.

flint. A variety of quartz breaking with a conchoidal fracture and having sharp edges useful for cutting; it produces sparks when struck with steel; in pulverized form it is used in pottery making; see chalcedony.

flint glass. See glass, flint.

floc test. Qualitative test applied to illuminating oils to detect substances rendered insoluble by heat.

flocculating. Thickening consistency of an enamel or glaze slip by addition of an electrolyte.

flocculation. Coagulation and rapid precipitation of finely divided solids, which normally remain in suspension in water and other liquids.

flock. Soft, fluffy fibers recovered from woolen manufacture.

Floex. A condensation product of a higher fatty alcohol used as a wetting agent in the paint and lubrication industries.

flora. Vegetable life, as contrasted with fauna, or animal life.

Florence oil. See oil, olive.

florescence. A term used for the crystallization of soluble salts on the surfaces of building materials.

flotation. Method for separating valuable minerals from gangue, based on difference in wettability. See flotation oil.

flotation oil. See oil, flotation.

flotation plane. Plane of level surface of the liquid in which an object is floating.

flour improvers. Yeast nutrients which stimulate rate of gas production by yeast in baking.

flour sulfur. See sulfur, flour.

flow, cold. Measure of permanent distortion which takes place in plastics under pressure at room temperature.

flower of paradise. See henna.

flowers of sulfur. A finely divided pure sulfur obtained by cooling sulfur vapors on a cold surface.

fluavil. Yellowish heavy liquid resin in gutta percha.

fluellite. See aluminum fluoride, $AlF_3 \cdot H_2O$.

fluid. Substance readily assuming the shape of the container in which it is placed; a substance in which the application of every system of stresses (other than hydrostatic pressure) will produce a continuously increasing deformation without any relation between time rate of deformation at any instant and the magnitude of stresses at that instant.

fluid extract. Concentrated liquid preparation of vegetable drugs; containing alcohol as a preservative or solvent.

fluidity. Reciprocal of viscosity.

fluid ton. Metallurgical measure of volume equal to about 32 cu. ft.

fluocerite. See cerium fluoride (ous).

fluoran (9-hydroxy-9-xanthene-o-benzoic acid lactone). $C_{20}H_{12}O_3$; m.w. 300.09; flat need.; m.p. 173-5; s.al.

fluoran, 2, 7-dihydroxy-. See hydroquinonephthalein.

fluoranthene (idryl.). $C_{16}H_{10}$; m.w. 202.08; col. monocl. need. f.al.; m.p. 110; b.p. 251 [20]; i.w.; s.al.

fluorapatite. See apatite.

fluorene (diphenylenemethane). $C_6H_4CH_2C_6H_4$; m.w. 166.08; col. leaf. f.al.; m.p. 116; b.p. 295; i.w.; s.al.

fluorene alcohol. See 9-fluorenol.

fluorene, keto-. See 9-fluorenone.

fluorene, 9-oxo-. See 9-fluorenone.

9-fluorenol (fluorene alcohol; diphenylenecarbinol). $C_6H_4CHOHC_6H_4$; m.w. 182.08; hex. need. f.w.; m.p. 153; s.al.

9-fluorenone (9-oxofluorene; ketofluorene; diphenylene ketone). $C_6H_4COC_6H_4$; m.w. 180.06; yel. rhomb. pr.; m.p. 84; b.p. 341.5; i.w.; s.al.

fluorescein (resorcinol phthalein). $C_{20}H_{12}O_5$; 332.09; or.-red cr. powd.; i.w.; s.al.

fluorescein, dibromohydroxymercuri-, disodium salt. See mercurochrome 220 soluble.

fluorescein, 4, 5-dihydroxy-. See gallein.

fluorescein, 2, 4, 5, 7-tetrabromo-. See eosin.

fluorescein, 2, 4, 5, 7-tetraiodo-. See erythrosin.

fluorescence. Instantaneous re-emission of light from a substance of a greater wavelength than that light originally absorbed.

fluorescence analysis. Analysis based on characteristic luminescence of a substance when irradiated.

fluorination. Process of introducing fluorine into an organic compound.

fluorine. F; m.w. 19.00; d. 1.69 [15] g/l; s.g. liq. 1.108^{-187}; m.p. −223; b.p. −187; a greenish-yellow gas, the most active of the halogen family of elements, occurring combined in fluorspar and cryolite, extreme activity, combining with nearly all the elements; prepared by electrolysis of a solution of potassium hydrogen fluoride in anhydrous hydrogen fluoride.

fluorine oxide. F_2O; m.w. 54.00; col. gas. unst.; s.g. liq. $1.90^{-223.6}$; m.p. −223.8; b.p. −144.8; i.w.

fluorite (fluorspar). A mineral, CaF_2; cub., col., oft. yel., bl., grn., vlt.; rar. red; sp.gr. 2.97-3.25; hardness 4; see also calcium fluoride.

fluoroform (trifluoromethane). CHF_3; m.w. 70.01; gas; b.p. 20 [40 atm.], s.w.; s.al.

fluorogen. Substance which induces fluorescence in another material with which it is mixed.

fluoroscopy. Visual x-ray examination effected by the use of a fluorescent screen to receive the image.

fluorspar. See fluorite.

fluosilicates. Salts of fluosilicic acid, H_2SiF_6; used in ceramic industries, technical paints, render stonework resistant to atmospheric decay, and as insecticides.

fluosilicic acid. H_2SiF_6; m.w. 144.08; col. liq.; s.g. 1.29-31 [12]; s.w.

flush color. Chemically precipitated color dispersed in a vehicle by a flushing machine.

flutter effect. Alteration in effective resistance of iron-cored coils, dependent not only on working point of magnetization curve but also on very slow time changes of this point.

flux. A substance, the addition of which produces an easily fusible compound; a substance which promotes the fusing

of minerals or prevents oxide formation; in physics, the rate of flow or transfer of electricity, water, heat, etc.

flux oil. See oil, flux.

foam. See froth.

foamite. A licorice extract used in fire extinguishers to produce a foam; also called firefoam; particularly useful in oil fires.

focal length. The distance from the centre of a lens to the plane on which the image of a distant object is projected with maximum sharpness.

focal plane. Plane thru either focal point of an optical system, perpendicular to the system's axis.

focus (pl. foci). Point of intersection where rays or beams converge or point from which rays seem to diverge.

focus, principal. See principal focus.

fomite. Inanimate agent which spreads material causing disease, e.g. soiled bedding or drinking-glasses.

food colors. Harmless dyes which are manufactured under conditions ensuring the absence of injurious by-products or impurities.

fool's gold. See pyrite.

foot-candle. A measure of intensity of illumination. One foot-candle is the intensity of illumination when a source of 1 candle-power illuminates a screen 1 ft. away.

foot-pound. A unit of work; the amount of work required to lift a pound mass through a distance of one foot.

foot-poundal. A measure of work, the work done by a force of one poundal acting thru a distance of 1 foot; 32.2 foot-poundals = 1 foot-pound; 1 foot-poundal = 3.9952 B.T.U., 0.0010067 gram-calories, 0.031081 foot-pounds, 4.21402×10^{3} ergs.

foots. Slimy matter deposited by oils on standing.

force. That which changes the state of rest or motion in matter, measured by the rate of change of momentum, or the acceleration of a known mass upon which the force acts.

force, inner. See inner field.

force, relaxation. See relaxation force.

forces, resolution of. Two or more forces whose combined effect is equivalent to the given single force being resolved.

forensic chemistry. Chemistry applied to the solution of certain problems in connection with the administration of justice.

form factor. See multiplicity factor.

formal. See methane, dimethoxy-.

formaldehyde (methanol; oxomethane). HCHO; m.w. 30.02; col. gas.; m.p. −92; b.p. −21; s.w.; s.al; biological preservative, formation of synthetic resins such as bakelite, etc., disinfectant.

para-formaldehyde. See polyoxymethylene.

formaldehyde dust. Formaldehyde held in an inert material; used in plant and soil disinfecting.

formaldehyde, diethyl acetal. See methane, diethoxy-.

formaldehyde, dimethyl acetal. See methane, dimethoxy-.

formaldehyde, dipropyl acetal. See methane dipropoxy-.

formaldehyde, oxime (formoxime; formaldoxime). HCH:NOH; m.w. 45.03; col. liq.; b.p. 84.

formaldehyde, 2-thienyl-. See 2-thiophenecarbonal.

formaldehyde, thio- (trimer) (s-trithiane; trimethylene trisulfide; trithioformaldehyde; methanethial. [trimer]). $SCH_2SCH_2SCH_2$; m.w. 138.23; tetr. |———| pr.; m.p. 215-6; s.w.; s.al.

formaldoxime. See formaldehyde, oxime.

formalin. A 40% aqueous solution of formaldehyde.

formamide (methanamide). $HCONH_2$; m.w. 45.03; col. liq.; m.p. 2.55; s.w.; s.al.

formamide, chloro-. See carbamyl chloride.

formamide, N, N-diethyl- (N-formyl diethylamine). $HCON(C_2H_5)_2$; m.w. 101.09; col. liq.; b.p. 174-6; s.w.; s.al.

formamide, N, N-diphenyl- (N-formyldiphenylamine; N-phenylformanilide). $HCON(C_6H_5)_2$; m.w. 197.09; rhomb. f.al. m.p. 74; b.p. 220; s.w.; s.al.

formamide, N-ethyl- (N-ethylmethanamide). $HCONHC_2H_5$; m.w. 73.06; liq.; b.p. 197-9; s.w.; s.al.

formamide, oxime (methenyl amidoxime; isuretin). $HC(:NOH)NH_2$; m.w. 60.05; rhomb. f acet. or al.; m.p. 114; s.w.; s.al.

formamide, N-phenyl-. See formanilide.

formamide, ureido-. See biuret.

formamidine, amino-. See guanidine.

formamidine, N, N'-diphenyl-. $C_6H_5N:CHNHC_6H_5$; m.w. 196.11; need. f.al.; m.p. 136; b.p. >250; s.w.; s.al.

formamine. See hexamethylenetetramine.

formanilide (N-phenylformamide). $HCONHC_6H_5$; m.w. 121.06; col. monocl. pr.; m.p. 47.5; b.p. 271; s.w.; s.al.

formanilide, N-phenyl-. See formamide, N, N-diphenyl-.

formaniline. C_6H_5NCHO; m.w. 120.45 colorless to yellow cryst. solid; sp.gr. 1.112 at 80° C.; m.p. 46; b.p. 271 s.w.; used in mfg. intermediates, organic chemicals, and in medicine.

formaplex. Synthetic oil soluble tar-acid resin.

formic acid (methanoic acid). HCOOH; m.w. 46.02; col. liq.; m.p. 8.40; b.p. 100.7; s.w.; s.al.

formic acid, acetyl-. See pyruvic acid.

formic acid, allyl ester (allyl formate; 2-propenyl methanoate). $HCOOCH_2CH:CH_2$; m.w. 86.05; liq.; b.p. 83; s.w.; s.al.

formic acid, o-aminobenzoyl-. See isatic acid.

formic acid, amyl ester (amyl formate; pentyl methanoate). $HCOO(CH_2)_4CH_3$; m.w. 116.09; col. liq.; m.p. −73.5; b.p. 130.4; s.w.; s.al.

formic acid, benzoyl-. See glyoxylic acid, phenyl-.

formic acid, benzyl ester (benzyl formate; benzyl methanoate). $HCOOCH_2C_6H_5$; m.w. 136.06; arom. liq.; b.p. 203.4; i.w.; s.al.

formic acid, butyl ester (butyl formate; butyl methanoate). ($HCOOC_4H_9$); m.w. 102.08; col. liq.; m.p. −90; b.p. 106.8; s.w.; s.al.

formic acid, sec-butyl ester. $HCOOCH(CH_3)C_2H_5$; m.w. 102.08; b.p. 97; s.w.; s.al.

formic acid, chloro-, butyl ester (n-butyl chlorocarbonate). $ClCOO(CH_2)_3CH_3$; m.w. 136.53; b.p. 140-5.

formic acid, chloro-, ethyl ester (ethyl chloromethanoate; ethyl chlorocarbonate). $ClCOOC_2H_5$; m.w. 108.50; col. liq.; m.p. −80.6; b.p. 94.

formic acid, chloro-, isoamyl ester (γ-methylbutyl chloromethanoate; isoamyl chlorocarbonate). $ClCOOC_5H_{11}$; m.w. 150.54; col. liq.; b.p. 156; s.al.

formic acid, chloro-, isobutyl ester (β-methylpropyl chloromethanoate; isobutyl chlorocarbonate). $ClCOOCH_2CH(CH_3)_2$; m.w. 136.53; col. liq.; b.p. 130.

formic acid, chloro-, methyl ester (methyl chloromethanoate; methyl chlorocarbonate). $ClCOOCH_3$; m.w. 94.48; col. liq.; b.p. 71.4; s.al.

formic acid, chloro-, propyl ester (n-propyl chlorocarbonate). $ClCOOCH_2CH_2CH_3$; m.w. 122.51; col. liq.; b.p. 116; s.al.

formic acid, chloro-, trichloromethyl ester. See diphosgene.

formic acid, cyano-, ethyl ester (ethyl cyanomethanoate; cyanoethyl carbonate). $CNCOOC_2H_5$; m.w. 99.05; liq.; b.p. 116; i.w.; s.al.

formic acid, ethylene ester. See glycol, diformate.

formic acid, ethyl ester (ethyl formate, ethyl methanoate). $HCOOC_2H_5$; m.w. 74.05; col. liq.; m.p. −80.5; b.p. 54.3; s.w.; s.al.; used in flavoring extracts and in medicine.

formic acid, geranyl ester. See geraniol, formate.

formic acid, heptyl ester (N-heptyl formate). $HCOOC_7H_{15}$; m.w. 144.12; col. liq.; b.p. 176.7; i.w.; s.al.

formic acid, hexyl ester (N-hexyl formate). $HCOO(CH_2)_5CH_3$; m.w. 130.11; col. liq.; b.p. 123.6; s.w.; s.al.

formic acid, isoamyl ester (γ-methylbutyl methanoate). $HCOO(CH_2)_2CH(CH_3)_2$; m.w. 116.09; col. liq.; b.p. 123.5; s.al.

formic acid, isobutyl-. See isovaleric acid.

formic acid, isobutyl ester (isobutyl formate; β-methylpropyl methanoate). $HCOOCH_2CH(CH_3)_2$; m.w. 102.08; col. liq.; m.p. −95.3; b.p. 98.2; s.al.

formic acid, isopropyl ester (isopropyl methanoate). $HCOOCH(CH_3)_2$; m.w. 88.06; liq.; b.p. 71.3; s.al.

formic acid, l-linalyl ester. See l-linaloöl, formate.

formic acid, methyl ester (methyl methanoate; methyl formate). $HCOOCH_3$; m.w. 60.03; col. liq.; m.p. −99.0; b.p. 31.50; s.w.; s.al.

formic acid, octyl ester (N-octyl formate). $HCOO(CH_2)_7CH_3$; m.w. 158.14; col liq.; b.p. 198; i.w.

formic acid, phenyl-. See benzoic acid.

formic acid, p-phenylphenacyl ester. $HCOOCH_2COC_6H_4C_6H_5$; m.w. 240.09; m.p. 74.

formic acid, propyl ester (N- propyl formate). $HCOOC_3H_7$; m.w. 88.06; col. liq.; m.p. −92.9; b.p. 81.3; s.al.

formic acid, 2-thenoyl-. See 2 thiopheneacetic acid, α-keto-.

formic ether. See formic acid, ethyl ester.

formohydrazide (formylhydrazine). $HCONHNH_2$; m.w. 60.05; yel. pl. or need.; m.p. 54; i.w.; s.al.

formol. See formaldehyde.

formolite. Precipitate formed by unsaturated cyclic hydrocarbons when mineral oil is treated with formaldehyde and sulfuric acid.

formolite number. Number of grams of dried formolite obtained from 100 cc. of oil under specified conditions.

formolite reaction. Condensation reaction between certain petroleum compounds and formaldehyde in presence of sulfuric acid; a measure of resins and unsaturated hydrocarbons.

formonitrolic acid (methylnitrolic acid). $HC(:NOH)NO_2$; m.w. 90.03; need. f. et.; m.p. 64; s.w.; s.al.

Formopon. See Discolite.

formosa camphor. See d-camphor.

formose ($C_6H_{12}O_6$). A mixture of hexoses, a sweet syrup obtained by adding milk of lime to 4% formaldehyde, filtering and concentrating after the mixture has reacted for half an hour.

formoxime. See formaldehyde, oxime.

formula. A symbolic representation of the composition of chemical compounds, also used for convenience as a shortened form in place of the name, e.g. H_2O_2 represents hydrogen peroxide and indicates that a molecule of the compound contains two each of hydrogen and oxygen atoms; the directions, including substances and weights, for compounding a product or mixture.

formula, graphic. See graphic formula.

formula, projection. See projection formula.

formula, rational. Formula derived from fundamental principles.

formula weight. In ceramic calculations, the equivalent of molecular weight using empirical formula.

Formvar. A polyvinyl acetate-methylal resin.

formyl chloride, chloro-. See phosgene.

forsterite. A mineral, Mg_2SiO_4; rhomb., wh., grnsh., yelsh.; sp.gr. 3.191-3.33; hardness 6-7.

Fortrat diagram. Parabolic diagram component lines of molecular banc

fossil flour. See infusorial earth.

fossil resin. See amber.

fossil wax. See wax, ozokerite.

four-dimensional analysis. Minkowski analysis of space-time.

Fourdrinier machine. Device that allow carefully screened pulp of uniform consistency to flow onto endless be horizontal wire screen forming pap as water drains off.

Fourier theorem. Any finite, period motion, may be resolved into com ponents each of which is a simpl harmonic motion of a certain an determinate amplitude and phase.

fowlerite. See rhodonite.

Fowler's solution. A solution of potas sium arsenite used in medicine whe arsenic in a soluble form is to be given

fractional crystallization. Proces wherein one solute is crystallized fro a solution of two or more solutes; use for the purification of crystallin substances.

fractional distillation. The separatio of the components of a liquid mixtur by collection of fractions condensing in certain temperature ranges. Thi is best accomplished by means o fractionating columns (q.v.).

fractionating column or tower. Column containing sieve plates, bubble-cap or irregular packing materials, used in distilling processes for removal of vapors of different boiling points.

fractionation. Separation of a mixture into its components by some physical process; distillation process for separating vapors of different boiling points. See rectification.

frame of reference. Points, lines o planes referred to for defining spacia co-ordinates.

frangula (Persian berries). Dried bark of Rhamnus frangula used in medicine.

frangula emodin. See emodin.

frangulin. $C_{20}H_{20}O_9$; m.w. 404.16; yel need.; m.p. 226; s.w.; s.al.

Frankfort black. See drop black.

frankincense (Thus gum). A gum-resin from the Boswellia carterii; used in perfumery, fumigating preparations and pharmacy.

franklinite. A mineral, $(Fe,Mn,Zn)(FeO_2)_2$; cub., iron blk.; sp.gr. 5.07-5.22; hardness 5.5-6.5.

Frary metal. An anti-friction bearing metal consisting of calcium, barium, and lead.

Fraunhofer lines. Dark lines in the sun's spectrum due to absorption of certain wave lengths of light upon passing thru the sun's atmosphere.

fraxin. $C_{16}H_{18}O_{10}$; m.w. 370.14; need f.al.; m.p. 190; s.w.; s.al.

free carbon. The solid carbonaceous matter remaining after the extraction of coal tar or pitch with pure toluol.

free electron. Electron not permanently attached to any one atom and not restricted by potential gradients within a substance.

free energy. See energy, free.

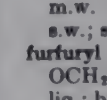
free radical. A complex of abnormal valency which possesses additive properties but does not carry an electrical charge and is not a free ion. e.g. $(C_6H_5)_3C$.

free rotation. Assumption in organic chemistry that two atoms joined by a single covalent bond can have free rotation about that bond as an axis.

freezing point (melting point). Temperature at which a solid and its liquid phase exist in equilibrium; in case of solutions, the temperature at which the solidified solvent and the solution exist in equilibrium.

freezing point depression, molecular. The lowering of freezing point produced by dissolving one gram molecule of any substance in one kilogram of solvent (1.86° C. where water is the solvent and the solute is undissociated).

es lebenite. A natural lead-silver ulfantimonate, $5(Pb,Ag_2)S \cdot 2Sb_2S_3$.
nch almond oil. See oil, apricot ernel.
nch chalk. See talc.
nch fat oil. See oil, French fat.
quency. In uniform circular motion or in any periodic motion the number of revolutions or cycles completed in unit time; number of double alternations per second of an alternating current.
quency, critical. See critical frequency.
quency, high. See high frequency.
quency, threshold. See critical frequency.
esnel. A unit of frequency, equal to 10^{12} cycles per second.
esnel formula. Formula for loss of light perpendicularly incident at an interface between two transparent media.
ction, boundary (greasy friction). Friction between solid surfaces, which are protected by an infinitely thin layer of lubricant which maintains an unbroken film even under high pressure.
iction, dry (solid friction). Friction between clean, dry, solid surfaces.
iction, fluid. Internal friction of a continuous lubricating film between moving solid surfaces.
riction, greasy. See friction, boundary.
riction, kinetic coefficient of. Ratio of kinetic friction to the normal reaction for a given pair of surfaces.
riction, rolling. Friction between solid surfaces separated by balls or rollers.
riction, static coefficient of. Ratio of limiting friction to the normal reaction for a given pair of surfaces.
riction, solid. See friction, dry.
Friedel-Crafts' Reaction. A reaction involving the condensation of alkyl or acyl halides with benzene and its homologues under the influence of aluminum chloride, the halogen acid being eliminated.
rigadreaction. Evolution of heat when helium or hydrogen are brought into contact with carbon at −195° C.
ringe. Band of maximum or minimum illumination caused by interference or diffraction.
Frit. Preliminary melted ceramic glaze.
froth (foam). More or less stable extended air-liquid interface arising when bubbles persist at the surface of a liquid due to agitation, aeration or ebullition.
froth flotation. Process for separation of minerals wherein finely divided mineral, water and oil are agitated in presence of air. The froth formed carries off the mineral.
d-fructosamine (isoglucosamine; isodextrosamine). $CH_2OH(CHOH)_3CO\text{-}CH_2NH_2$; m.w. 179.11; syrup; i.al.
d-fructose (levulose; fruit sugar). $C_6H_{12}O_6$; m.w. 180.09; need. f.w.; m.p. 105; s.w.
fructosin. See levulin (synthetic).
fruit sugar. See d-fructose.
frustum. Remainder of a cone or pyramid when an upper portion is cut off by a plane parallel to the base.
fuchsine (magenta). A synthetic rosaniline dyestuff which is used as a direct silk and wool dye, also as a red dye in the leather industry.
fucose (2, 3, 4, 5-tetrahydroxyhexanal [one form]). $C_6H_{12}O_5$; m.w. 164.09; need. f.al.; m.p. 145; s.w.
fuel, colloidal. Mixtures of fuel oil with finely divided coal or other combustible material.
fuel oil. See oil, fuel.
fugacity. Tendency of a substance to escape or disappear chemically from the phase in which it is present.
fugalling. Centrifuging.
fugitive. Pertaining to colors changing or fading rapidly when exposed to light or laundering.
Fulcher bands. First known regularities in hydrogen molecule spectrum.
Fuller's earth. A natural porous, absorptive aluminum silicate; used for cleaning-cloths, in the refining of oils, grease, and lard.
fulling. Process of compacting or shrinking of woolens.
fulminate. Salt of the hypothetical fulminic acid, CNOH. The mercury salt, $Hg(CNO)_2$, is used in percussion caps and detonators.
fulminic acid, silver salt (silver fulminate; fulminating silver). AgCNO; m.w. 149.89; sm. wh. need. f.w.; s.al.
fulminuric acid (2-cyano-2-nitroethanamide; cyanonitroacetamide; isocyanuric acid). $CNCH(NO_2)CONH_2$; m.w. 129.05; col. pr. f.al.; s.w.; s.al.
fumaric acid (trans-butenedioic acid; trans-1, 2-ethylenedicarboxylic acid). HOOCCH:CHCOOH; m.w. 116.03; col. monocl. pr.; m.p. 287; b.p. 290.
fumaric acid, bromo-. BrC(COOH):CHCOOH; m.w. 194.94; pl.; m.p. 185-6; s.w.; s.al.
fumaric acid, chloro-. ClC(COOH):CHCOOH; m.w. 150.48; pl.f.ac.a.; m.p. 191-2; s.w.; s.al.
fumaric acid, diethyl ester (ethyl fumarate; diethyl fumarate). $(:CHCOOC_2H_5)_2$; m.w. 172.09; col. liq.; b.p. 218; s.w.; s.al.
fumaric acid, dimethyl ester (methyl fumarate). $(:CHCOOCH_3)_2$; m.w. 144.06; col. tricl. pr.; m.p. 102; b.p. 192; i.w.; s.al.
fumaric acid, methyl-. See mesaconic acid.
fumaric acid, monoethyl ester (monoethyl fumarate). HOOCCH:CHCOOC$_2$H$_5$; m.w. 144.06; pl.; m.p. 66; b.p. 147 [16]; s.w.; s.al.
fume. Particles resulting from chemical processing, combustion, explosion and distillation, 0.1-1.0 micron in size.
fumigation. Exposure to vapors or fumes for disinfection or destruction of bugs, rats, etc., e.g. fumigation of ships' holds, sickrooms, etc. with sulfur candles, formaldehyde, etc.
Fumonex. Gas carbon black.
function. One quantity is said to be a function of another when it varies in some manner as the other varies, e.g. where $y = x^3 + 5$, y is being expressed as a function of x; thus also, pH is a function of hydrogen-ion concentration.
functional group. Atom or combination of atoms responsible for common properties.
functional scale. A scale in which the function of a variable is represented on one axis only. Each point shows the value of the variable at that point and not the value of the function.
functionality. Effective number of bonds and points of inter-molecular attachment in a chemical compound, the degree or order of reactivity.
fungi. A plural form. See fungus.
fungi, sac. See ascomycetes.
fungicide. Chemical for destroying fungi, e.g. lime-sulfur spray or nicotine preparation.
fungus. A plant of simple structure, lacking chlorophyll. It has no root, stem or leaf, and reproduces by spores. Examples are molds, toad-stools, bacteria, and yeast.
furacrolein. See acrolein, β-2-furyl.
furacrylic acid. See 2-furanacrylic acid.
fural. See furfural.
2-furaldehyde. See furfural.
furan (furfuran). OCH:CHCH:CH; m.w. 68.03; col. liq.; b.p. 31 [745]; i.w.; s.al.
2-furanacetonitrile (2-furylacetonitrile; furfuryl cyanide). $C_4H_3O \cdot CH_2CN$; m.w. 107.05; col. liq.; m.p. 78-80 [20]; s.w.; s.al.
furan, 2-acetyl-. See ketone, 2-furyl methyl.
2-furanacrylic acid (β-2-furylacrylic acid; 2-furalacetic acid; furacrylic acid). $C_4H_3OCH:CHCOOH$; m.w. 138.05; wh. cr.; m.p. 141-2; b.p. 226; i.w.; s.al.
2-furanacrylic acid, amyl ester (n-amyl furfuracrylate). $C_4H_3O \cdot CH:CHCOOC_5H_{11}$; m.w. 208.12; col. liq.; b.p. 119.4; i.w.
2-furanacrylic acid, butyl ester (n-butyl furacrylate). $C_4H_3OCH:CHCOOC_4H_9$; m.w. 194.11; col. liq.; b.p. 121.0 [5]; i.w.; s.al.
2-furanacrylic acid, ethyl ester (ethyl furfuracrylate; ethyl furacrylate; ethyl β-1-furylacrylate). $C_4H_3O \cdot CH:CHCOOC_2H_5$; m.w. 166.08; col. liq.; m.p. 24.5; b.p. 118-9 [10]; i.w.; s.al.
2-furanacrylic acid, methyl ester (methyl furacrylate). $C_4H_3OCH:CHCOOCH_3$; m.w. 152.06; col. liq.; m.p. 27.5; b.p. 114-5 [16]; i.w.; s.al.
2-furanacrylic acid, propyl ester (upropyl furacrylate)-. $C_4H_3OCH:CHCOOC_3H_7$; m.w. 180.09; col. liq.; b.p. 119 [7]; i.w.; s.al.
furan, 2-benzoyl-. See ketone, 2-furyl phenyl.
furan, 3-bromo- (β-furyl bromide). C_4H_3BrO; m.w. 146.94; liq.; b.p. 101.9-2.2 [744]; i.w.; s.al.
furan, 2-butoxymethyltetrahydro- (tetrahydrofurfuryl n-butyl ether). $C_4H_7O \cdot CH_2OC_4H_9$; m.w. 158.14; col. liq.; m.w. 194.5-6.0 [721]; i.w.; s.al.
2-furancarbinol. See furfuryl alcohol.
2-furancarbonal. See furfural.
2-furancarbonyl chloride. See pyromucyl chloride.
2-furancarboxylic acid. See pyromucic acid.
3-furancarboxylic acid (3-furoic acid). $C_4H_3O \cdot COOH$; m.w. 112.03; col. need. f.w.; m.p. 120.5-1.5; b.p. 105-10 [12]; i.w.
3-furancarboxyl'c acid, butyl ester. See pyromucic acid, butyl ester.
3-furancarboxylic acid, 4, 5-dihydro-5-keto-. See aconic acid.
3-furancarboxylic acid, 2, 5-dimethyl-. See pyrotritaric acid.
3-furancarboxylic acid, 2-methyl-. $CH_3C_4H_2O \cdot COOH$; m.w. 126.05; col. cr.f.w.; m.p. 102-3; s.al.
3-furancarboxylic acid, 2-methyl-, ethyl ester. $CH_3C_4H_2O \cdot COOC_2H_5$; m.w. 154.08; col. liq.; b.p. 85-7 [20]; i.w.
3-furancarboxylic acid, tetrahydro-5-oxo-. See paraconic acid.
furan, 2-chloro- (β-chlorofurfuran). C_4H_3ClO; m.w. 102.48; col. liq.; b.p. 77.2-7.5 [744]; i.w.; s.al.
furan, 2-chloromercuri-. $C_4H_3O \cdot HgCl$; m.w. 303.09; col. cr. powd. f.al.; m.p. 148; i.w.; s.al.
furan, 2-(chloromethyl)- (furfuryl chloride). $C_4H_3OCH_2Cl$; m.w. 116.50; col. liq.; b.p. 49.1-9.4 [25]; i.w.; s.al.
furan, 2-(chloromethyl) tetrahydro- (tetrahydrofurfuryl chloride). $C_4H_7O \cdot CH_2Cl$; m.w. 120.53; col. liq.; b.p. 149.0-9.5 [721].
2, 5-furandicarbonyl chloride. See dehydromucyl chloride.
2, 3-furandicarboxylic acid. $C_4H_2O(COOH)_2$; m.w. 156.03; col. cr. powd.; m.p. 225; s.w.; s.al.
2, 3-furandicarboxylic acid, dimethyl ester. $C_4H_2O(COOH_3)_2$; m.w. 184.06; col. gran. cr.; m.p. 37; i.w.; s.al.
2, 5-furandicarboxylic acid. See dehydromucic acid.
furan, 2-(diethoxymethyl)- (furfural diethyl acetal). $C_4H_3O \cdot CH(OC_2H_5)_2$; m.w. 170.11; col. liq.; b.p. 184-5 [740]; i.w.; s.al.
furan, 2, 5-dimethyl-. $CH_3C_4H_2O \cdot CH_3$; m.w. 96.06; col. liq.; b.p. 94; i.w.; s.al.
furan, 2, 5-dinitro-. $C_4H_2O(NO_2)_2$; m.w. 158.03; need. f.w., pr.f.al.; m.p. 101; i.al.
2 5-furandione. See maleic anhydride.
furan, 2, 5-diphenyl-. $C_4H_2O(C_6H_5)_2$; m.w. 220.09; need. or leaf. f.dil.al.; m.p. 91; b.p. 343-5; i.w.; s.al.
furan, 2-ethoxymethyltetrahydro- (tetrahydrofurfuryl ethyl ether). $C_4H_7O \cdot CH_2OC_2H_5$; m.w. 130.11; col. liq.; b.p. 152-4 [738].
furan, 2-iodo-. C_4H_3IO; m.w. 193.94; col. liq.; b.p. 43-5 [16].
furan, 3-iodo-. C_4H_3IO; m.w. 193.94; col. liq.; b.p. 132.2 [731]; i.w.
furan, 2, 2'-mercuridi-. See mercury, di-2-furyl-.
furan, 2-methyl-. See silvan.
furan, 3-methyl-. $C_4H_3O \cdot CH_3$; m.w. 82.05; col. liq.; b.p. 65.5; s.al.
2-furanmethylamine. See furfurylamine.
furan, 2-nitro-. $C_4H_3O \cdot NO_2$; m.w. 113.03; lt. yel. monocl. f. pet. eth.; m.p. 28.8-9.2; i.w.
furan, tetrahydro- (tetramethylene oxide). $OCH_2CH_2CH_2CH_2$; m.w. 72.06; liq.; b.p. 67; s.w.; s.al.
furan, thio. See thiophene.
furan, 2, 3, 4-trichloro-. C_4HCl_3O; m.w. 171.38; b.p. 151.7-2.7 [734].
furfural (2-furancarbonal; 2-furaldehyde; fural; furfuraldehyde; furole; furfurole). C_4H_3OCHO; m.w. 96.03; col. liq.; m.p. −38.7; b.p. 161.7; s.al. structural formula is



furfural acetone. See acetone, furfural.
furfuralcohol. See furfuryl alcohol.
furfural, diacetate (furfurylidene diacetate). $C_4H_3OCH(OOCCH_3)_2$; m.w. 198.08; col. f. pet. eth.; m.p. 52-3; b.p. 220; i.w.; s.al.
furfural, diethyl acetal. See furan, 2-(diethoxymethyl)-.
furfural, hydramide (trifuraldiamine; furfuramide; hydrofuramide). $(C_5H_4O)_3N_2$; m.w. 268.11; need. f.al.; m.p. 121; i.w.; s.al.
furfural malonylthiourea. See barbituric acid, 5-(2-fural)-2-thio-.
furfural, phenylhydrazone. $C_4H_3OCH:NNHC_6H_5$; m.w. 186.09; m.p. 97; i.w.; s.al.
furfural, 5-methyl- (δ-methylfurfurole). $CH_3C_4H_2O \cdot CHO$; m.w. 110.05; col. liq.; b.p. 187; s.al.
furfural, 5-nitro-. $NO_2C_4H_2O \cdot CHO$; m.w. 141.03; straw yel.; m.p. 36.
furfural, tetrahydro- (furfural tetrahydride). $C_4H_7O \cdot CHO$; m.w. 100.06; col. liq.; b.p. 144-5 [740]; i.w.; s.al.
furfuramide. See furfural hydramide.
furfuran. See furan.
furfurine. $C_{18}H_{12}N_2O_2$; m.w. 268.11; lt. br. need.; m.p. 117; i.w.; s.al.
furfurole. See furfural.
furfuryl acetate. See acetic acid, furfuryl ester.
furfuryl alcohol (2-furancarbinol; furfuralcohol; α-furylcarbinol). $C_4H_3O\text{-}CH_2OH$; m.w. 98.05; col. liq.; b.p. 170.2; s.w.; s.al.
furfuryl alcohol, acetate. $C_4H_3OCH_2OOCCH_3$; m.w. 140.06; col. liq.; b.p. 175-7 [764]; i.w.; s.al.
furfuryl alcohol, butyrate. $C_4H_3OCH_2OOCC_3H_7$; m.w. 168.09; col. liq.; b.p. 212-3 [764]; s.w.; s.al.
furfuryl alcohol, methyl- (methyl-2-furancarbinol). $CH_3C_4H_2O \cdot CH_2OH$; m.w. 112.06; col. liq.; b.p. 177-8 [748]; s.w.; s.al.
furfuryl alcohol, propionate. $C_4H_3OCH_2OOCC_2H_5$; m.w. 154.08; col. liq.; b.p. 195-6 [752]; s.w.; s.al.
furfuryl alcohol, pyromucate (furfuryl furoate). $C_4H_3OCO_2CH_2C_4H_3O$; m.w. 192.06; dimorphous; m.p. 27.5; b.p. 122 [2]; i.w.; s.al.
furfuryl alcohol, tetrahydro- (tetrahydro-2-furancarbinol). $C_4H_7O \cdot CH_2OH$; m.w. 102.08; col. liq.; b.p. 177-8 [748]; s.w.; s.al.
furfurylamine (2-furanmethylamine). $C_4H_3OCH_2NH_2$; m.w. 97.06; col. liq.; b.p. 144-6; s.w.; s.al.
furfurylamine, tetrahydro- (tetrahydro-2-furanmethylamine). $OCH(CH_2NH_2)CH_2CH_2CH_2$; m.w. 101.09; col. liq.; b.p. 151-2 [736]; s.w.; s.al.
furfuryl chloride. See furan, 2-(chloromethyl)-.
furfuryl diamine. $(C_4H_3O \cdot CH_2)_2NH$; b.p. 102-3 at 1 mm.

furfuryl esters. See under furfuryl alcohol.

furfuryl ethyl ester. $C_4H_3O—CH_2—O—C_2H_5$; b.p. 150; sp.gr. 0.9844; s.al.

furfuryl ethyl ether, tetrahydro-. $C_4H_3O—CH_2—O—C_2H_5$; m.w. 126.08; b.p. 152-4 at 726 m.m.; sp.gr. 0.9386; s.w.

furfurylidene diacetate. See furfural, diacetate.

furfuryl mercaptan (2-furylmethanethiol). $C_4H_3OCH_2SH$; m.w. 114.11; col. oily liq.; b.p. 155; i.w.

furfuryl triamine. $(C_4H_3O—CH_2)_3N$; m.w. 257.11; b.p. 133-8 at 1 mm.

furil (bipyromucyl; di-2-furyl glyoxal). $C_4H_3OCOCOC_4H_3O$; m.w. 190.05; yel. need.; m.p. 165-6; i.w.; s.al.

furnace, reverberatory. See reverberatory furnace.

furoic acid, 2-furoic acid. See pyromucic acid.

3-furoic acid. See 3-furancarboxylic acid.

3-furoic acid, butyl ester. See pyromucic acid, butyl ester.

furoin. $C_4H_3OCHOHCOC_4H_3O$; m.w. 192.06; lt. yel: need.; m.p. 134-5; i.w.; s.al.

Furol. Contraction of phrase "fuel and road oils."

furole. See furfural.

furoyl chloride. See pyromucyl chloride.

furylacrylate derivatives. See the corresponding esters of 2-furanacrylic acid.

β-furyl bromide. See furan, 3-bromo-.

fusain. A constituent to some extent of all anthracite coals; it reduces the coking property of the coal in which it appears.

fuse. A safety device used to prevent excessive current in a circuit and consequent overheating of wires, being simply an easily fusible conductor inserted in series, and melting at a definite amperage.

fusel oil. See oil, fusel.

fusible metal. Alloy with low-melti point, usually a bismuth alloy, e. Wood's metal.

fusiform. Spindle-shaped.

fusion. Liquefying or melting by mea of heat.

fustic. Natural yellow dyewoods whic are usually used with metallic mo dants as chromium or tin.

fustic extract (Cuba wood). The nam of a yellow dye obtained from yello Brazil wood or from Rhus cotinu used in the textile and leather i dustries.

G

acid. See 2-naphthol-6, 8-disulfonic acid.

metal. See Guillaume alloy.

salt. Sodium salt of G acid, $C_{10}H_6OH(SO_3Na)_2$; m.w. 328.16; wh. needl.; s.w.; i.al.; used in mfr. azo dyes, intermediates.

Gabriel synthesis. An indirect method for replacing the halogen atom of an alkyl halide by an amino group.

gadolinite. A rare mineral consisting of the silicates of ytterbium earths, glucina and ferrous oxide.

gadolinium. Gd; m.w. 156.9; valence 3; a metallic element, a member of the terbium family of rare earths which includes terbium and europium. The free element has never been isolated.

gadolinium acetate. $Gd(C_2H_3O_2)_3 \cdot 4H_2O$; m.w. 406.43; tricl.; s.g. 1.611; s.w.

gadolinium bromide. $GdBr_3 \cdot 6H_2O$; m.w. 505.14; rhomb. pl.; s.g. 2.844 [15]; s.w.

gadolinium chloride. $GdCl_3$; m.w. 263.67; monocl. pr. col.; s.g. 4.52°; m.p. 628; s.w.

gadolinium chloride (hydrated). $GdCl_3 \cdot 6H_2O$; m.w. 371.76; wh. pr., deliq.; s.g. 2.424°; s.w.

gadolinium fluoride. GdF_3; m.w. 214.30; wh. gelat.; i.w.

gadolinium nitrate. $Gd(NO_3)_3 \cdot 5H_2O$; m.w. 433.40; prisms; s.g. 2.406 [15]; m.p. 92; s.w.

gadolinium nitrate. $Gd(NO_3)_3 \cdot 6H_2O$; m.w. 451.42; tricl.; s.g. 2.332; m.p. 91; s.w.

gadolinium oxalate. $Gd_2(C_2O_4)_3 \cdot 10H_2O$; m.w. 758.76; monocl.; m.p. $-6H_2O$, 110; s.w.

gadolinium oxide. Gd_2O_3; m.w. 362.60; wh. amor. powd., hyg.; s.g. 7.407 [15]; s.w.

gadolinium platinum cyanide. $Gd_2Pt_2(CN)_{12} \cdot 21H_2O$; m.w. 1395.48; rhomb.: s.g. 2.563.

gadolinium potassium sulfate. $Gd_2(SO_4)_3 \cdot K_2SO_4 \cdot 2H_2O$; m.w. 813.07; cryst.; s.g. 3.503 [16]; s.w.

gadolinium selenate. $Gd_2(SeO_4)_3 \cdot 8H_2O$; m.w. 888.32; monocl. pearly; s.g. 3.309; m.p. $-8H_2O$ 130; s.w.

gadolinium sulfate. $Gd_2(SO_4)_3$; m.w. 602.78; col.; s.g. 4.139 [14.6].

gadolinium sulfate (hydrated). $Gd_2(SO_4)_3 \cdot 8H_2O$; m.w. 746.90; monocl.; s.g. 3.010 [14.6].

gadolinium sulfide. Gd_2S_3; m.w. 410.78; yel. hyg. mass; s.g. 3.8.

gage. A measure of fineness of full fashioned hosiery expressing the number of needles per 1.5 inches; in textiles, it is occasionally used instead of the preferred term "thickness."

gage. Device for comparing linear dimensions of an object with a standard dimension or a dimension specified for the part. To measure by means of a gage.

gahnite (zinc-spinel). A mineral, $ZnAl_2O_4$; cub., grn., brn., blk.; sp.gr. 4.478-4.602; hardness 7.5-8.0; see also zinc aluminate.

galactan. Non-reducing substance which forms galactose when hydrolyzed.

galactolipin (cerebroside). Compound of fatty acids, galactose and a nitrogenous complex.

d-galactonic acid (d-lactonic acid). $CH_2OH(CHOH)_4COOH$; m.w. 196.09; need. f.w.; m.p. 95-100; s.w.

d-galactose. $C_6H_{12}O_6$; m.w. 180.09; hex. tab. f.al.; m.p. $+1H_2O$ 118-20, anh. 165-8; s.w.

d-galacturonic acid. $C_5H_9O_5COOH$; m.w. 194.08; micro. need.; s.w.; s.al.

Galalith. Plastic molding material made from casein and formaldehyde.

galbanum. A gum resin obtained from Ferula galbaniflua; used in medicine and perfumery.

galena (galenite, glance). A mineral, PbS; cub., lead gray to blk., sp.gr. 7.3-7.6; hardness 2.5; the chief lead-bearing ore.

galenite. See galena.

gall extract. Extracts obtained from nutgalls; used in mfg. of black inks, as a mordant in dyeing and printing textiles and in tanning.

galiosin. Glycoside consisting of anthraquinone derivative purpurin-3-carboxylic acid coupled to primeverose and containing compounds of the latter with alizarin and rubiadin.

gallacetophenone (2, 3, 4-trihydroxyacetophenone; 4-acetylpyrogallol). $CH_3COC_6H_2(OH)_3$; m.w. 168.06; leaf.; m.p. 173; s.w.; s.al.

gallanilide (gallanol; 3, 4, 5-trihydroxybenzanilide). $C_6H_5NHCOC_6H_2(OH)_3$; m.w. 245.09; col. cr. or powd.; m.p. 205; s.w.; s.al.

gallein (pyrogallolphthalein; 4, 5-dihydroxyfluoresceln). $C_{20}H_{12}O_7$; m.w. 364.09; red cr. powd.; s.w.; s.al.

gallic acid (3, 4, 5-trihydroxybenzoic acid). $(HO)_3C_6H_2COOH$; m.w. 170.05; col. monocl. need. f.w.; s.w.; s.al..

gallic acid, 3-monogallate. See m-digallic acid.

gallic acid trimethyl ether. See benzoic acid, 3, 4, 5-trimethoxy-.

gallin (3, 4, 5, 6-tetrahydroxy-9-xanthene-o-benzoic acid). $C_{20}H_{14}O_7$; m.w. 366.11; need.; s.w.; s.al.

gallipot, gum. See gum Gallipot.

gallium. Ga; m.w. 69.72; rhomb. pseudotetr. gray bl.; s.g. liq. 6.09 [30], 5.903 [25]; m.p. 29.78; b.p. 2000±150; i.w.; valence 2 or 3; a rare metal belonging to the aluminum group of elements, a hard, grayish-white substance; used in high temperature thermometers because it is liquid at near room temperature. It forms two series of the various salts, in which it appears as divalent and trivalent.

gallium acetate, basic. $4Ga(C_2H_3O_2)_3 \cdot 2Ga_2O_3 \cdot 5H_2O$; m.w. 1452.12; micr. cr., wh.; m.p. d. >160; s.w.

gallium acetylacetonate. $Ga(C_5H_7O_2)_3$; m.w. 366.88; α monocl. or., β rhomb. or.; s.g. α 1.42, β. 1.41; m.p. 194-5; b.p. subl. 140 [10]; s.w.

gallium amide, dimethyl-. $Ga(CH_3)_2NH_2$; m.w. 115.79; wh. cr.; b.p. subl. 60 vac.

gallium ammonium sulfate. $Ga_2(SO_4)_3 \cdot (NH_4)_2SO_4 \cdot 24H_2O$; m.w. 992.13; cub. oct. col.; s.g. 1.777; s.w.

gallium bromide, hexammine. $GaBr_3 \cdot 6NH_3$; m.w. 411.66; wh. powd.

gallium bromide, monammine. $GaBr_3 \cdot NH_3$; m.w. 326.50; wh. powd.; s.g. 3.112 [25]; m.p. 124.

gallium bromide, tri-. $GaBr_3$; m.w. 309.47; col. cr., deliq.; s.g. 3.69 [25]; m.p. 124.5±.5; b.p. 284±1; s.w.

gallium cesium selenate. $Ga_2(SO_4)_3 \cdot Cs_2SeO_4 \cdot 24H_2O$; m.w. 1268.81; col. cr.

gallium cesium sulfate. $Ga_2(SO_4)_3 \cdot Cs_2SO_4 \cdot 24H_2O$; m.w. 1221.67; cub. col.; s.g. 2.113.

gallium chloride, di-. $GaCl_2$; m.w. 140.63; col. cr., deliq.; m.p. 164; b.p. 535; s.w.

gallium chloride, di-, methyl-. $Ga(CH_3)Cl_2$; m.w. 155.66; wh. cr.; m.p. 75.

gallium chloride, dimethyl- diammine. $Ga(CH_3)_2Cl \cdot 2NH_3$; m.w. 169.29; wh. cr.; m.p. 112.

gallium chloride, di-, methyl-, monammine. $Ga(CH_3)Cl_2 \cdot NH_3$; m.w. 172; wh. cr.

gallium chloride, di-, methyl-, pentammine. $Ga(CH_3)Cl_2 \cdot 5NH_3$; m.w. 240.81; wh. cr.; m.p. d. >80.

gallium chloride, hexammine. $GaCl_3 \cdot 6NH_3$; m.w. 278.28; wh. powd.

gallium chloride, dimethyl-, monammine. $Ga(CH_3)_2Cl \cdot NH_3$; m.w. 152.26; wh. cr.; m.p. 54.

gallium chloride, monammine. $GaCl_3 \cdot NH_3$; m.w. 193.12; wh. powd.; s.g. 2.189 [25]; m.p. 124.

gallium chloride, tri-. $GaCl_3$; m.w. 176.09; col. cryst., deliq.; s.g. 2.47 [25], lq. 2.36[43]; m.p. 76.65; b.p. 199.6; s.w.

gallium ferrocyanide. $Ga_4[Fe(CN)_6]_3$; m.w. 914.54; gel. wh. ppt.; s.w.

gallium fluoride(ic). $GaF_3 \cdot 3H_2O$; m.w. 180.77; wh. powd.; s.w.

gallium hydroxide. $Ga(OH)_3$; m.w. 120.74; amor. wh.; i.w.

gallium hydroxide (hydrous gallium oxide). $Ga_2O_3 \cdot xH_2O$; gel. ppt. indef. comp.

gallium iodide, hexammine. $GaI_3 \cdot 6NH_3$; m.w. 552.67; wh. powd.

gallium iodide, monammine. $GaI_3 \cdot NH_3$; m.w. 467.51; wh. powd.; s.g. 3.635 [25]; m.p. 140.

gallium iodide, tri-. GaI_3; m.w. 450.48; col.-lem. yel. (need.), hyg.; s.g. 4.15 [32]; m.p. 213.5.

gallium nitrate. $Ga(NO_3)_3 \cdot xH_2O$; m.w. 255.74 + xH_2O.; wh. cr., deliq.; b.p. $-Ga_2O_3$ 200; s.w.

gallium nitride. GaN; m.w. 83.73; dk. gray powd.; i.w.

gallium oxalate. $Ga_2(C_2O_4)_3 \cdot 4H_2O$; m.w. 475.50; micr. powd. wh., hyg.; m.p. d. >160; s.w.

gallium oxide, sesqui-. Ga_2O_3; m.w. 187.44; wh. powd.; m.w. 187.44; wh. powd.; s.g. 6.44; m.p. 1900; i.w.

gallium oxide, sub-. Ga_2O; m.w. 155.44; br.-blk. powd.; m.p. >660; i.w.

gallium oxychloride. $6GaOCl \cdot 14H_2O$; m.w. 979.28; oct.; s.w.

gallium oxyquinolate. $Ga(C_9H_6NO)_3$; m.w. 501.88; grn.-yel. cr.; m.p. >150; subl. vac. i.w.; s.al.

gallium potassium sulfate. $Ga_2(SO_4)_3 \cdot K_2SO_4 \cdot 24H_2O$; m.w. 1034.25; col. cr.; s.g. 1.895; s.w.

gallium rhubidium sulfate. $Ga_2(SO_4)_3 \cdot Rb_2SO_4 \cdot 24H_2O$; m.w. 1126.93; col. cr.; s.g. 1.962; s.w.

gallium selenate. $Ga_2(SeO_4)_3 \cdot 16H_2O$; m.w. 857.29; col. cr.; s.w. $Ga_2(SeO_4)_3 \cdot 22H_2O$; m.w. 965.38; cr. monocl. or tricl., col.; s.w.

gallium sulfate. $Ga_2(SO_4)_3$; m.w. 427.62; wh. powd.; s.w.; s.al.

gallium sulfate (hydrated). $Ga_2(SO_4)_3 \cdot 18H_2O$; m.w. 751.90; col. cr.; s.w.; i.al. $Ga_2(SO_4)_3 \cdot 22H_2O$; m.w. 823.96; wh. leaf.; s.w.; s.al.

gallium sulfide, mono-. GaS; m.w. 101.78; sublimate, lt. yel.; s.g. 3.75±.03; m.p. 965±10; i.w.

gallium sulfide, sesqui-. Ga_2S_3; m.w. 235.62; yel. cr. or wh. amor.; s.g. 3.48±.02; m.p. 1255±10.

gallium sulfide, sub-. Ga_2S; m.w. 171.50; grn. cr. or blk. powd.; s.g. 4.22±.03.

gallium, triethyl-. $Ga(C_2H_5)_3$; m.w. 156.84; col. liq.; s.g. 1.0576 [20]; m.p. −82.3; b.p. 142.6.

gallium, triethyl-, monammine. $Ga(C_2H_5)_3 \cdot NH_3$; m.w. 173.87; col. liq.

gallium, triethyl-, monoetherate. $Ga(C_2H_5)_3 \cdot (C_2H_5)_2O$; m.w. 230.92; col. liq.

gallium, trimethyl-. $Ga(CH_3)_3$; m.w. 114.79; col. liq.; m.p. −19; b.p. 55.7±.2 [760].

gallium, trimethyl-, monammine. $Ga(CH_3)_3 \cdot NH_3$; m.w. 131.82; wh. cr.; m.p. 31; b.p. subl. vac.

gallium, trimethyl-, monoetherate. $Ga(CH_3)_3 \cdot (C_2H_5)_2O$; m.w. 188.87; col. liq.; m.p. < −76; b.p. 99 [760].

gallium zincate. Ga_2ZnO_4; m.w. 268.82; s.g. 6.15 calc.; m.p. <800.

gallon, Imperial. See Imperial gallon.

gallotannic acid. See tannic acid.

galvanic cell. Arrangement in which a chemical reaction produces an electric current; essentially, a device which forces the electrons which are exchanged in a chemical reaction to flow thru an external circuit.

galvanism. A term formerly used for a current produced by a chemical action.

galvanized iron. Iron with a coating of zinc which may be applied by dipping in molten zinc or by electrolysis.

galvanizing. Coating iron with zinc usually by hot-dipping.

galvanoluminescence. Emission of feeble glow from anode in certain electrolytic cells.

galvanometer. An instrument designed for measuring electrical currents by using the magnetic effect of an electric current in turning an indicator.

galvanometer, tangent. See tangent galvanometer.

gambier. An extract obtained from the Uncaria gambier and used in dyeing, silk weighting, and tanning.

gambier, gum. See gum gambier.

gambir. See gambier.

gamboge, gum. A gum resin obtained from the Garcina hanburii; gr. or orange-br. amorph. sol.; sp.gr. 1.03; s.al., i.w.; used as a paint pigment and as a powerful cathartic.

gamete. Sex reproductive cell. A male and female gamete unite to form a zygote, or fertilized egg.

gametophyte. A plant that produces gametes (eggs and sperms).

gamma (γ). Unit of magnetic field intensity, 1.0000×10^{-5} gauss.

gamma acid. See G acid.

gamma compound. A compound where an organic group is placed on the gamma or third carbon in the compound; e.g.

$$\overset{\gamma}{CH_3}—\overset{\beta}{CH_2}—\overset{\alpha}{CH_2}—COOH.$$

gamma ray (γ ray). Electromagnetic radiation of high frequency, not deflected by electric or magnetic

fields and of great penetrative power.

gamma value. See interval factor.

gangue. Waste material separated in the processes of ore concentration.

ganister. A highly siliceous sedimentary rock used for making fire-bricks and for the lining of Bessemer converters.

ganomalite. A mineral, $4CaO \cdot 6PbO \cdot 6SiO_2 \cdot H_2O$; tetr., col., gray; sp.gr. 5.57-5.7; hardness 3.

Gardinol (Duponol). Sulfated higher fatty alcohol sodium salt; wh. pd.; s.w.; wetting agent.

Gardinol LS. Sodium salt of sulfated technical oleyl alcohol.

Gardinol WA. Sodium salt of sulfated technical lauryl alcohol.

Gardlite (Santolite). Synthetic resin formed by condensation of toluol sulfonamides and formaldehyde.

Gardner-Holt tubes. Series of standardized glass tubes, containing non-changing liquids of definite viscosity used for comparisons of viscosity.

garlic oil. See oil, garlic.

garnet. A group of silicates of cubic crystalline form, having the general formula $R''_3R'''_2(SiO_4)_3$, R'' representing Ca, Mg, Fe or Mn, and R''' representing Al, Fe, Cr or Ti. Members of this group are almandite, andradite, grossularite, spessartite and uvarovite (q.v.); used as a precious stone and abrasive.

garnet lac. Shellac (q.v.) that has been poured into mold and is called either "button" shellac or garnet lac; orange color.

garnierite (noumeite). A mineral, $H_2(Ni,Mg)SiO_4$ (variable); amor., bright grn., pa. grn. to wh., sp.gr. 2.27-2.87; hardness 2-3; an important nickel ore.

gas. A substance which remains homogeneous and whose volume increases without limit when the pressure is continuously reduced at constant temperature.

gas black (carbon black). A fluffy black pigment produced by the incomplete combustion of natural gas; used in printer's ink, rubber tires and goods, stove polish, etc.

gas, blau. See oil gas.

gas, coal. See coal gas.

gas constant. Pressure times volume divided by the temperature of one gram molecule of any ideal gas.

gas, ideal. See ideal gas.

gas, Leuna. See Leuna gas.

gas lime. Slaked lime used to take the carbon dioxide, carbon disulfide and hydrogen sulfide out of gas.

gas liquor. See ammonia liquor.

gas mantle (incandescent mantle). A mantle made of ramie yarn, silk substitutes, and other materials, impregnated with thoria and ceria, and used as a source of illumination when heated to incandescence with a gas flame.

gas, natural. See natural gas.

gas, noble. See noble gas.

gas oil. The petroleum distillate boiling between kerosene and lubricating oil fractions; yel. to br. oily liq.; sp.gr. 1.306-1.408; b.p. 315-343; used in carburetting water gas.

gas, oil. See oil gas.

gas, pintsch. See oil gas.

gas, producer. See producer gas.

gas washing. The passing of a gas thru a purifying media to remove impurities, e.g. bubbling through concentrated sulfuric acid to remove moisture.

gas, water. See water gas.

gasoline. The low boiling fractions obtained in petroleum distillation, by "cracking" of heavier portions or by compression of natural gas, used as a fuel and solvent, and in paint mixing and rubber cements.

gasoline, casing-head. See natural gasoline.

gasoline, natural. See natural gasoline.

gasometer. A gas holder or metal tank for storing gas at the place of manufacture.

gassing. The production of harmful effects upon the human organism by means of toxic gases.

gastric juice. The juice secreted in the stomach by the peptic glands, contains pepsin, rennin and hydrochloric acid.

gauge. Number denoting thickness and weight of metal sheet; process of mixing plaster, cement, etc. with water.

gaultheria oil. See oil, gaultheria.

gauss, absolute. Unit of magnetic field intensity; 1 e.m.u. unit; 1 gilbert per centimeter; 1.00007 International gauss; 2.99796×10^{10} e.s.u.

Gay-Lussac tower. The tower in the lead-chamber process for making sulfuric acid where the nitrogen oxides are dissolved by a stream of sulfuric acid.

Gay-Lussac's law of combining volumes. See combining volumes, law of, and also Charles' law.

gay-lussite. A mineral, $CaCO_3 \cdot Na_2CO_3 \cdot 5H_2O$; monocl., wh. to yelsh.; sp.gr. 1.93-1.95; hardness 2-3.

Geaphthal. Synthetic alkyd resin.

gedanite. A resin similar to rosin but not containing succinic acid.

gehlenite. A mineral, $CaO \cdot MgO \cdot Al_2O_3 \cdot SiO_2$; tetr., grayish grn. to br.; sp.gr. 2.9-3.07; hardness 5.5-6.0.

Geiger counter. Device for detecting and counting ionizing particles in air.

Geiger-Nuttall Law. Logarithms of range of alpha particles and disintegration constant of different radioactive elements bear a linear relation to each other.

geikielite. A mineral, $(Mg,Fe)O \cdot TiO_2$; hex. (trig.), bluish or brnsh. blk.; sp.gr. 3.98-4.0; hardness 6.

Geissler tube. A two electrode vacuum discharge tube giving a glow discharge.

gel. Jelly-like colloid.

gel solution. Characteristic condition of very viscous solutions of high polymerides with linear or fiber molecules; dissolved molecules are completely solvated but have no free mobility.

gelatin. An albuminous colloidal substance found in many animal tissues including cartilage, bone and horn, used as a clarifying agent, a glue, in leather dressings, and as a protective colloid.

gelatin, blasting. See blasting gelatin.

gelatin, bone. See bone gelatin.

gelatin, explosive. A powerful explosive obtained by mixing collodion cotton with nitroglycerin.

gelatin, nutrient. A gelatin containing 10% meat broth used for cultivating bacteria.

gelatinize. To form a jelly-like structure.

Gellert green. Pigment formed when metallic cobalt is roasted and ignited with zinc oxide and potassium nitrate.

d-gelsemine. $C_{20}H_{22}N_2O_2$; m.w. 322.19; m.p. 178; i.w.; s.al.

gelsemine, compd. with acetone. $C_{20}H_{22}N_2O_2 \cdot (CH_3)_2CO$; m.w. 380.23; pr.f. acet.; m.p. anh. 120.

d-gelsemine, hydrochloride. $C_{20}H_{22}N_2O_2 \cdot HCl$; m.w. 358.65; pr.f.w.; m.p. 300; s.w.; s.al.

Gelva. Series of polymerized vinyl acetate resins; m.p. 65-196; col.; i.w.; s.al., toluol.

gemmation. See budding.

Gemstone. Synthetic tar-acid resin.

gene. An elementary unit of the germ plasm regarded as part of the chromosome and playing an important part in transmission, development, and determination of hereditary characteristics; see chromomere.

Geneva system. The standard method for naming complex organic compounds.

genthite. A variety of garnierite, $2NiO \cdot 2MgO \cdot 3SiO_2 \cdot 6H_2O$.

gentian. The dried root of Gentiana lutea used in medicine and liqueurs.

gentianin. See gentisin.

gentisic acid (2, 5-dihydroxybenzoic acid; hydroquinonecarboxylic acid). $(HO)_2C_6H_3COOH \cdot 3H_2O$; m.w. 208.09; need. f.w.; m.p. 200; s.w.; s.al.

gentisic acid, 4-hydroxy-. See benzoic acid, 2, 4, 5-trihydroxy-.

gentisin (1, 7-dihydroxy-3-methoxyxanthone; 3-methoxyeuxanthone; gentianin). $C_{14}H_{10}O_5$; m.w. 258.08; yel. need.; m.p. 267; s.w.; s.al.

geocronite. A mineral formed in lead and antimony veins, $5PbS \cdot Sb_2S_3$.

geometrical mean. Result of multiplying two numbers and extracting square root of product.

geometrical progression. See progression, geometrical.

geranial. See citral A.

geranic acid (3, 7-dimethyl-2, 6[and 2, 7] octadienoic acid). $C_{10}H_{16}O_2$; m.w. 168.12; thin oil; b.p. 119 [20]; i.w.; s.al.

geraniol. $C_{10}H_{18}O$; m.w. 154.14; col. liq.; m.p. < -15; b.p. 229; i.w.; s.al.

geraniol, acetate (geranyl acetate). $C_{12}H_{20}O_2$; m.w. 196.16; col. liq.; s.w.; s.al.

geraniol, butyrate (geranyl butyrate). $CH_3(CH_3)_2COOC_{10}H_{17}$; m.w. 224.19; b.p. 151-3 [18]; i.w.; s.al.

geraniol, dihydro-. See dl-citronellol.

geraniol, formate. $HCOOC_{10}H_{17}$; m.w. 182.14; liq.; b.p. 113-4 [15]; i.w.; s.al.

geraniol, tetrahydro-. See 1-octanol, 3, 7-dimethyl-.

geranium oil. See oil, geranium.

geranium oil, Indian. See oil, palmarosa.

geranium oil, Turkish. See oil, palmarosa.

geranyl acetate. See geraniol, acetate.

geranyl esters. See under geraniol.

germ process oil. See oil, germ process.

germ tube. First shoot formed in the germination of a fungus spore.

German silver. An alloy of zinc (19-44%), nickel (16-22%) and copper.

germane, di-, hexaethyl-. $[(C_2H_5)_3Ge]_2$; m.w. 319.43 col. liq.; m.p. < -60; b.p. 265 [760]; i.w.

germane, di-, hexaphenyl-. $[(C_6H_5)_3Ge]_2$; m.w. 607.43; cryst., wh.; m.p. 340; i.w.

germane, tri-, octaphenyl-. $(C_6H_5)_8Ge_3$; m.w. 834.11; cryst. wh.; m.p. 247-8; i.w.

germanium. Ge; m.w. 72.60; cub.; s.g. 5.35^{25}_{25}; m.p. 958.5; i.w.; valence 4; a metallic element of the silicon group, lying between silicon and tin in chemical properties; gray-white, brittle, crystalline.

germanium bromide, di-. $GeBr_2$; m.w. 232.43; col. need. or pl.; m.p. 122.0; s.al.

germanium bromide, tetra-. $GeBr_4$; m.w. 392.26; gray-wh. oct.; s.g. 3.132^{25}_{25}; m.w. 26.1; b.p. 186.5.

germanium bromide, triethyl-. $(C_2H_5)_3GeBr$; m.w. 239.63; col. liq.; m.p. -33; b.p. 190.9.

germanium bromide, triphenyl-. $(C_6H_5)_3GeBr$; m.w. 383.63; hex., col.; m.p. 138.7; i.w.

germanium bromoform. $GeHBr_3$; m.w. 313.36; col. liq.; m.p. -24.0.

germanium bromomonogermane, di-. GeH_3Br_3; m.w. 234.45; col. liq.; s.g. 2.80 [0]; m.p. -15.0; b.p. 89.0; i.al.

germanium bromomonogermane, mono-. GeH_3Br; m.w. 155.54; col. liq.; s.g. 2.34 [20.4]; m.w. -32.0; b.p. 52.0; i.al.

germanium chloride, di-. $GeCl_2$; m.w. 143.51; wh. powd.; i.al.

germanium chloride, tetra-. $GeCl_4$; m.w. 214.43; col., liq.; s.g. 1.879^{25}_{25}; m.p. -49.5; b.p. 83.0; s.al.

germanium chloride, triethyl-. $(C_2H_5)_3GeCl$; m.w. 195.17; col. liq.; m.p. < -50; b.p. 175.9.

germanium chloride, triphenyl-. $(C_6H_5)_3GeCl$; m.w. 339.17; cryst., wh.; m.p. 117-8; i.w.

germanium chloroform. $GeHCl_3$. m.w. 179.98; col. liq.; s.g. 1.93 [0]; m.p. -71.0; b.p. 75.2.

germanium chloromonogermane, di-. GeH_3Cl_3; m.w. 145.53; col. liq.; s.g. 1.90 [-80]; m.p. -68.0; b.p. 69.5; i.al.

germanium chloromonogermane, mono-. GeH_3Cl; m.w. 111.08; col. liq.; s.g. 1.75 [-52]; m.p. -52.0; b.p. 28.0; i.a.

germanium fluoride. GeF_4; m.w. 148.60 col. gas or solid, not lq. at atm. press. d. 6.65 g/l.

germanium fluoride (hydrated). $GeF_4 \cdot 3H_2O$; m.w. 202.65; wh. cr., deliq. s.w.

germanium fluoride, di-. GeF_2; m.w. 110.60; wh. cr., hyg.; s.w.

germanium fluoride, triethyl-. $(C_2H_5)_3GeF$; m.w. 178.72; col. liq.; b.p. 149.0 [761].

germanium fluoride, triphenyl-. $(C_6H_5)_3GeF$; m.w. 322.72; cryst., wh.; m.p. 76.6; i.w.

germanium hydride (digermane). Ge_2H_6; m.w. 151.25; liq.; d. 6.74 [20] g/l. gas; s.g. liq. 1.98 [-109]; m.p. -109; b.p. 29.

germanium hydride (trigermane). Ge_3H_8; m.w. 225.86; col. liq.; s.g. 2.2; m.p. -105.6; b.p. 110.5; i.w.

germanium hydride, mono-. GeH; m.w. 73.61; br. powd.; i.w.

germanium hydride, tetra- (monogermane). GeH_4; m.w. 76.63; col. gas; d. 3.43 g/l; s.g. liq. 1.532 [-183]; m.p. -165.0; b.p. -90.0; i.w.

germanium hydride, triethyl-. $(C_2H_5)_3GeH$; m.w. 160.72; col. liq.; b.p. 124.4 [761]; i.w.

germanium hydride, triphenyl-. $(C_6H_5)_3GeH$; m.w. 304.72; cryst. wh. (2 forms); m.p. α, 47 [0]; β 27 [0] i.w.

germanium imide. $Ge(NH)_2$; m.w. 102.63; wh. amor. powd.

germanium imine, triethyl-. $[(C_2H_5)_3Ge]_2NH$; m.w. 334.45; col. liq.; b.p. 100 [0.3].

germanium iodide, di-. GeI_2; m.w. 326.44; yel. hex.; s.w.

germanium iodide, tetra-. GeI_4; m.w. 580.28; cub. yel.; s.g. 4.322^{44}_{4}; m.p. 144.0; s.w.

germanium iodide, triethyl-. $(C_2H_5)_3GeI$; m.w. 286.64; col. liq.; m.p. < -50; b.p. 212.3.

germanium iodide, triphenyl-. $(C_6H_5)_3GeI$; m.w. 430.64; cryst., wh.; m.p. 157.

germanium nitride, di-. Ge_3N_2; m.w. 245.82; blk. cr.

germanium nitride, tetra-. Ge_3N_4; m.w. 273.83; wh.-lt. br. powd.; i.w.

germanium nitride, tri-triphenyl-. $[(C_6H_5)_3Ge]_3N$; m.w. 925.16; need., col.; m.p. 163-4.

germanium oxide, di- (insoluble). GeO_2; m.w. 104.60; tetr.; s.g. 6.239; m.p. 1086 $\pm$ 5; i.w.

germanium oxide, di- (soluble). GeO_2; m.w. 104.60; col. polymorph.; s.g. 4.703 [15]; m.p. 1115.0.

germanium oxide, mono-. GeO; m.w. 88.60; blk. cr. powd.; i.w.

germanium oxide, triethyl-. $[(C_2H_5)_3Ge]_2O$; m.w. 335.43; col. liq.; m.p. < -50; b.p. 253.9; i.w.

germanium oxide, triphenyl-. $[(C_6H_5)_3Ge]_2O$; m.w. 623.43; col. pl.; m.p. 183-4; i.w.

germanium oxychloride. $GeOCl_2$; m.w. 159.51; col. liq.; m.p. -56.0.

germanium sulfide, di-. GeS_2; m.w. 136.72; wh. powd.; s.g. 2.94 [14]; m.p. *ca* 800.0; i.al.

germanium sulfide, mono-. GeS; m.w. 104.66; yel.-red. amor. or rhomb. blk. s.g. (am.). 3.31, (rhomb.) 4.01^{18}_{4}; m.p. 530; i.w.

germanium, tetrethoxyl-. $Ge(OC_2H_5)_4$; m.w. 252.76; col. liq.; m.p. -81; b.p. 185-7.

germanium, tetraethyl-. $Ge(C_2H_5)_4$; m.w. 188.76; col. oil; s.g. $0.991^{25.5}_{25.5}$; m.p. -90; b.p. 163.5; i.w.

germanium, tetraphenyl-. $(C_6H_5)_4Ge$ m.w. 380.76; tetr., col.; m.p. 235.7 b.p. >400; i.w.

germanol, triphenyl-. $(C_6H_5)_3GeOH$; m.w. 320.72; cryst., wh.; m.p. 134.2 i.w.

Germantown black. See lamp black.

germicide. A material that kills bacteria and other microorganisms.

germination. Exaggerated grain growth in steel. In botany, the development

f the embryo of seeds or spores.

ter. Volatile metal introduced into a vacuum tube for removing traces of undesirable gases.

tti, gum. See gum ghatti.

nt granite. See pegmatite.

obs adsorption law. When the concentration in the interfacial layers between two phases is greater than in the bulk of either phase, then the substance is said to be adsorbed at the interface.

bbs thermodynamic surface. Three dimensional representation of equilibrium values of volume, energy and entropy of a pure substance.

obsite (hydrargillite). A mineral, $Al_2O_3 \cdot 3H_2O$; monocl., wh., grnsh., redsh. to yel.; sp.gr. 2.3-2.42; hardness 2.5-3.5.

lbert. Unit of magnetomotive force; magnetic potential against which an erg of work is done when unit magnetic pole is transferred.

lbert, absolute. Unit of magnetic potential, 0.07958 abampere-turn; 1.00007 International gilbert (a).

lder's size. A bleached cologne glue made into thin leaves.

lder's white (gilder's whiting). The coarser grades of whiting or natural chalk.

lsonite. See mineral rubber.

ngelly oil. See oil, sesame.

nger. The dried rhizome of Zinziber officinale used in medicine, condiments and soft drinks.

nseng. The root of Panax quinquefolium employed medicinally by the Chinese.

irard's reagent. Betaine hydrazide hydrochloride.

irbotol process. Process employing an amine to remove carbon dioxide and hydrogen sulfide from refinery gases.

ladstone-Dale law. The refractivity of a medium varies with its density as the latter changes with pressure or temperature.

lance. See galena.

lance pitch. An asphaltite resembling gilsonite, but having a black streak instead of brown; a pure asphalt.

lancing angle. Very small angle formed by incident emission and the incident surface.

larimeter. Instrument used for measuring gloss.

laserite. See arcanite.

lass. A supercooled liquid of high viscosity which may be considered as a solid solution of fused silicates of varying composition.

lass, Bohemian. Potash-lime glass commonly used for hollow ware.

lass, borax. See borax glass.

lass, crown. Soda-lime glass sometimes containing barium oxide and a small proportion of alumina; used for windows, better grade bottles and lenses.

lass, flint. Essentially a potash-lead glass, used in finer table glassware and optical glass.

lass, laminated. See safety glass.

lass, liquid. Sodium silicate or water glass used in textiles, filling for soap, waterproofing walls, preservative for eggs, etc.

lass, muscovy. See muscovite.

lass, safety. See safety glass.

lass, uviol. See uviol glass.

lass wool. Very fine strands of glass, resembling wool in appearance, used in insulation.

Glauber salt. See mirabilite.

glauberite. A mineral, $Na_2SO_4 \cdot CaSO_4$; monocl., pa. yel., gray, or red; sp.gr. 2.7-2.85; hardness 2.5-3.0.

d-glaucine. $C_{21}H_{25}NO_4$; m.w. 355.20; yel. rhomb. pr.; m.p. 119-20; s.w.; s.al.

glauconite. A hydrated iron and potassium silicate used like permutit for water-softening.

glaucophane (glaucophanite). A mineral, $NaAl(SiO_3)_2 \cdot (Fe, Mg)SiO_3$; monocl., blue; sp.gr. 2.991-3.15; hardness 6.0-6.5.

glaze. Fusible mixture used in the ceramic industries; a vitreous coating on the finished product.

glazier's salt. See potassium sulfate.

gliadin (prolamin). Protein found in cereals, soluble in 70-90% alcohol and dilute acids and alkalis, insoluble in water and salt solutions, e.g. zein.

glide plane. Common plane of two axes of a twin crystal.

glidin. A substance obtained from wheat flour, containing albumin and used to form compounds with irritant drugs.

gliding. Forming of twin crystals.

gliding plane. Slipping of one lattice layer beyond its neighboring layer when crystal is under a shearing force.

Globlak. Carbon pigment lacquer chip consisting of ¼ second cellulose nitrate 55%, plasticizer 20%, carbon black 25%.

globulin. Native protein, insoluble in water and soluble in dilute salt solutions.

globulite (spherolite). Globular microscopic crystal.

glonoin. See nitroglycerin.

gloss. The property of a surface by which it reflects light specularly.

gloss, contrast (gloss; subjective gloss). A fraction the denominator of which is the apparent reflectance of the sample when illuminated in a direction other than perpendicular and viewed in the direction of specular reflection, and whose numerator equals the same apparent reflectance of the sample identically illuminated but viewed perpendicularly.

gloss, degree of. Logarithm of quotient of reflected and diffused light.

gloss, distinctness-of-image. Gloss indicated by the faithfulness with which the surface produces images of objects.

gloss number, maximum. Difference between brightness of light reflected in the angle of incidence and the brightness of the purely diffused light.

gloss, objective. See gloss, specular.

gloss oil. See oil, gloss.

gloss, specular (objective gloss; polish). Ratio of apparent reflectance of a sample illuminated unidirectionally and viewed in the direction of regular reflection to the apparent reflectance of the ideal, completely reflecting, perfect mirror.

gloss, subjective. See gloss, contrast.

glossiness. The appearance ascribable to the gloss of a surface.

Glover's tower. A tower used in the lead-chamber process for sulfuric acid manufacture, where the nitrogen oxides, dissolved in sulfuric acid obtained from Gas-Lussac tower, are liberated so they can react with oxygen and sulfur dioxide to form nitrosylsulfuric acid.

glow potential. Potential at which a glow discharge in a vacuum tube begins.

glucide. See saccharin.

glucinum. See beryllium.

glucinium oxide. See beryllium oxide.

glucochloralose (chloral glucose). Condensation product of chloral and d-glucose.

d-gluco-α-heptose. $CH_2OH(CHOH)_5CHO$; m.w. 210.11; rhomb. pl. f.w.; s.al.

d-gluconic acid (dextronic acid; d-glyconic acid; maltonic acid; glycogenic acid). $C_5H_6(OH)_5COOH$; m.w. 196.09; cr.; m.p. 125-6; s.w.; i.al.

d-gluconic acid, δ-lactone. $C_5H_6(OH)_4$ (COO); m.w. 178.08; need.; m.p. 146.

glucoprotein. See glycoprotein.

glucosane. Polysaccharide which, upon hydrolysis, yields hexoses.

d-glucosazone. See d-glucose, phenylosazone.

d-glucose (anh.) (dextrose; grape sugar). $C_6H_{12}O_6$; m.w. 180.09; rhomb. need. f.al.; m.p. (+1H_2O 118-20) anh. 146; s.w.; s.al.

d-glucose, (α). $C_6H_{12}O_6 \cdot H_2O$; m.w. 198.11; m.p. 146; s.w.

d-glucose, (β). $C_6H_{12}O_6 \cdot H_2O$; m.w. 198.11; need. f.al.; m.p. 150; s.w.

glucose, chloral. See glucochloralose.

d-glucose, diacetate (diacetyl-d-glucose). $C_6H_8(OOCCH_3)_2(OH)_2CHO$; m.w. 264.12; col. cr. or lt. yel. amor.; m.p. <100; s.w.; s.al.

glucose, β-glucoside. See cellobiose.

d-glucose, α-pentaacetate (pentaacetyl α-d-glucose). $C_6H_7O(OOCCH_3)_5$; m.w. 390.17; fine need. f. lgr. or al.; m.p. 113.

d-glucose, β-pentaacetate (β-pentaacetyl-d-glucose). $C_6H_7O_6(OCCH_3)_5$; m.w. 390.17; need. f.al. m.p. 131.

d-glucose, μ-pentaacetate. $C_6H_7O(OOCCH_3)_5$; m.w. 390.17; monocl. tab.; m.p. 116-8; s.w.; s.al.

d-glucose, pentaacetyl-. See d-glucose, pentaacetate.

d-glucose, α-phenyl hydrazone. $C_6H_{12}O_5NNHC_6H_5$; m.w. 270.16; col. cr.; m.p. 160; s.w.; s.al.

d-glucose, β-phenyl hydrazone. $C_6H_{12}O_5NNHC_6H_5$; m.w. 270.16; col. need.; m.p. 141; s.w.; s.al.

d-glucose, phenyl osazone (d-glucosone bisphenyl hydazone; dextosazone; d-gluocasasone). $C_6H_{10}O_4(:NNHC_6H_5)_2$; m.w. 358.20.; yel. need.; s.w.; s.al.

glucoside. Substance, which, on hydrolysis gives a reducing sugar and one or more other substances soluble in water, e.g. salicin; see heteroside.

glucoside, α-methyl-. $C_7H_{14}O_6$; m.w. 194.11; rhomb. f.w.; m.p. 165; s.w.

glucoside, β-methyl-. $C_7H_{14}O_6$; m.w. 194.11; tetr. f.al.; m.p. 104; s.w.

d-glucosone, bisphenylhydrazone. See d-glucose, phenylosazone.

glue. An impure gelatin obtained upon hydrolysis of certain portions of animals or fish such as bones, hides, etc.

glusimide. See saccharin.

d-glutamic acid (d-glutaminic acid; d-α-aminoglutaric acid). $COOH(CH_2)_2CH(NH_2)COOH$; m.w. 147.08; tetr. pl.

dl-glutamic acid (dl-glutaminic acid; dl-α-aminoglutaric acid). $COOH(CH_2)_2CH(NH_2)COOH$; m.w. 147.08; tetr. pl.; s.al.

l-glutamic acid (l-glutaminic acid; l-α-aminoglutaric acid). $C_3H_5(NH_2)(COOH)_2$; m.w. 147.08; col. rhomb. pl. f.w.; m.p. 202.

l-glutamic acid, hydrochloride. $C_5H_9NO_4 \cdot HCl$; m.w. 183.54; tricl. pl.; s.al.

glutamic acid, β-hydroxy-(dl) (dl-α-amino-β-hydroxyglutaric acid). $COOHCH_2CH(OH)CH(NH_2)COOH$; m.w. 163.08; rhomb. pr. and need.; s.w.

glutamic acid, β-hydroxy-(d) (d-2-amino-3-hydroxypentanedioic acid). $COOHCH_2CHOHCH(NH_2)COOH$; m.w. 163.08; pr.f.w.; m.p. hyd. 105; s.w.; s.al.

dl-glutamine (dl-α-aminoglutaramic acid). $C_3H_5(NH_2)(CONH_2)COOH$; m.w. 146.09.
dl: need. f.w.; m.p. 256
d: need.; m.p. 185-6.

glutaramic acid, dl-α-amino-. See dl-glutamine.

glutaric acid (pentanedioic acid). $COOH(CH_2)_3COOH$; m.w. 132.06; col. monocl.; m.p. 97.5; s.w.; s.al.

glutaric acid, α-amino-. See glutamic acid.

glutaric acid, diethyl ester (diethyl pentanedioate; ethyl glutarate). $C_2H_5OOC(CH_2)_3COOC_2H_5$; m.w. 188.12; liq.; m.p. −24.1; b.p. 237; s.al.

glutaric acid, α-hydroxy- (2-hydroxypentanedioic acid). $COOHCHOH(CH_2)_2COOH$; m.w. 148.06; sm. col. cr.; m.p. 72-3; s.w.; s.al.

glutaric acid, β-keto-. See acetone dicarboxylic acid.

glutaric acid, piperazinium salt. $C_4H_{10}N_2 \cdot 2C_5H_8O_4$; m.w. 350.22; wh. cr.; m.p. 152; s.w.; s.al.

glutaric acid, α, β, γ-trihydroxy-(dl). $COOH(CHOH)_2COOH$; m.w. 180.06; col. tab. f. acet.; s.w.; s.al.

glutaric acid, α, β, γ-trihydroxy-(d or l) (2, 3, 4-trihydroxypentanedioic acid). $COOH(CHOH)_3COOH$; m.w. 180.06; col. leaf. f. acet.; m.p. 128; s.w.; s.al.

glutaronitrile (pentanedinitrile; trimethylene dicyanide; trimethylene cyanide). $CN(CH_2)_3CN$; m.w. 94.06; col. liq.; m.p. −29; b.p. 287.4; s.w.; s.al.

glutein. Vegetable protein, similar to the globulins, is soluble in alkalis.

glutelin. Vegetable protein, e.g. glutenin and oryzenin, insoluble in water but soluble in dilute alkalis.

glutin. A constituent of glue; a protein of great adhesive strength.

glyakol. Diglyceryl ether tetraacetate.

glyceraldehyde (2, 3-dihydroxyproanal; α, β-dihydroxypropionaldehyde). $CH_2OHCHOHCHO$; 90.05; need. or pr. f. me. al.; m.p. 138; s.w.; s.al.

glyceric acid (2, 3-dihydroxypropanoic acid; α, β-dihydroxypropionic acid). $CH_2OHCHOHCOOH$; m.w. 106.05; syrup.; s.w.; s.al.

glyceric acid, ethyl ester (ethyl 2, 3-dihydroxy propanoate). $CH_2OHCHOHCOOC_2H_5$; m.w. 134.08; liq.; b.p. 230-40; s.w.; s.al.

glyceric acid, methyl ester (methyl glycerate). $CH_2OHCHOHCOOCH_3$; m.w. 120.06; b.p. 239-44; s.w.; s.al.

glyceride. Ester of glycerol, e.g. stearin (glyceryl tristearate).

glyceride, mixed. Glyceride (q.v.) containing more than one kind of fatty acid radical, e.g. glyceryl mono stearate dipalmitate.

glycerin. See glycerol.

glycerite. A solution of medicinal materials in glycerin.

glycerogenic. See steatolytic.

glycerol (glycerin; 1, 2, 3-propanetriol); $CH_2OHCHOHCH_2OH$; m.w. 92.06; rhomb. or col. liq.; m.p. 17.9; b.p. 220; s.w.; s.al.

glycerol borate (glyceryl borate). $(C_3H_5BO_3)_x$; m.w. (99.86)$_x$; glassy yel.

glycerol, α-chlorohydrin. See 1, 2-propanediol, 3-chloro-.

glycerol, diacetate (diacetin). $C_3H_5(OH)(OOCCH_3)_2$; m.w. 176.09; col. liq.; m.p. 40; b.p. 176 ^{40}; s.w.; s.al.

glycerol, sym-dichlorohydrin. See 2-propanol, 1, 3-dichloro-.

glycerol, uns-dichlorohydrin. See 1-propanol, 2, 3-dichloro-.

glycerol, 1, 3-dilaurate (α, γ-dilaurin). $(C_{11}H_{23}COO)_2C_3H_5OH$; m.w. 456.41; cr.; m.p. 56.6; s.al.

glycerol, 1, 3-dinitrate. $C_3H_5(OH)(NO_3)_2 \cdot \frac{1}{2}H_2O$; m.w. 191.07; liq.; m.p. < −30, anh. 26; b.p. 148 ^{15}; s.al.

glycerol, 1, 3-dipalmitate (α, γ-dipalmitin). $(C_{15}H_{31}COO)_2C_3H_5OH$; m.w. 568.53; cr.f.al. or chl.; m.p. 70; s.al.

glycerol, 1, 3-distearate (α, γ-distearin). $(C_{17}H_{35}COO)_2C_3H_5OH$; m.w. 624.59; rhomb. pl. f. chl. or lgr.; m.p. 79.1; s.al.

glycerol ether (of Berthelot and de Luca) (glyceryl ether). $C_6H_{10}O_3$; m.w. 130.08; col. liq.; b.p. 173; s.w.; s.al.

glycerol ethylidene ether. See acetoglyceral.

glycerol, monoacetate (monoacetin). $CH_2OHCHOHCH_2OOCCH_3$; m.w. 134.08; col. oil.; b.p. 158 ^{165}; s.w.; s.al.

glycerol, 1-monolaurate (α-monolaurin). $C_{11}H_{23}COOCH_2CHOHCH_2OH$; m.w. 274.23; wh. need.; m.p. 63.0; s.al.

glycerol, α-mononitrate. $CH_2OHCHOHCH_2ONO_2$; m.w. 137.06; col. pr.; m.p. 58; b.p. 155-60; s.w.; s.al.

glycerol, β-mononitrate. $CH_2OHCH(ONO_2)CH_2OH$; m.w. 137.06; leaf.; m.p. 54; b.p. 160; s.w.; s.al.

glycerol, 1-monoöleate (monoölein). $C_{17}H_{31}COOCH_2CHOHCH_2OH$; m.w. 354.30; m.p. 35; i.w.; s.al.

glycerol, 1-monopalmitate (α-monopalmitin). $C_{15}H_{31}COOCH_2CHOHCH_2OH$; m.w. 330.30; leaf.; m.p. 77.0.

glycerol, monoricinoleate. $C_{17}H_{32}COOC_3H_5(OH)_2$; m.w. 356.31; amber liq.; s.al.

glycerol, 1-monostearate (α-monostearin). $C_{17}H_{35}COOCH_2CHOHCH_2OH$; m.w. 358.33; need. or waxlike solid.; m.p. 81.1; s.al.

glycerol, 1-octadecyl ether. See 1, 2-propanediol, 3-octadecyloxy-.

glycerol, 1-sodium derivative (sodium glycerolate). $CH_2OHCHOHCH_2ONa$; m.w. 114.05; wh. powd.; s.al.

glycerol, 1-thio- (3-mercapto-1, 2-propanediol). $(HO)_2C_3H_5SH$; m.w. 108.12; thick liq.; s.w.; s.al.

glycerol, triacetate (triacetin). $C_3H_5(OOCCH_3)_3$; m.w. 218.11; cbl. liq.; m.p. −78; b.p. 259; s.al.

glycerol, tribenzoate (tribenzoin). $C_3H_5(OOCC_6H_5)_3$; m.w. 404.16; need. f.me.al.; m.p. 76.5; i.w.; s.al.

glycerol, tribromohydrin. See propane, 1, 2, 3-tribromo-.

glycerol, tributyrate (butyrin; tributyrin). $(CH_3CH_2CH_2CO)_3C_3H_5O_3$; m.w. 302.20; col. oily liq.; m.p. < −75; b.p. 315; i.w.; s.al.

glycerol, trichlorohydrin. See propane, 1, 2, 3-trichloro-.

glycerol, trilaurate (trilaurin; laurin). $(C_{11}H_{23}COO)_3C_3H_5$; m.w. 638.58; col. need.; m.p. 46.4; i.w.; s.al.

glycerol, trimyristate (myristin; trimyristin). $(C_{13}H_{27}COO)_3C_3H_5$; m.w. 722.67; glit. need. f.et.; m.p. 56,5; i.w.; s.al.

glycerol, trinitrate. See nitroglycerin.

glycerol, trinitrite. $C_3H_5(ONO)_3$; m.w. 179.06; yel. liq.; i.w.

glycerol, trioleate (triolein; olein; glyceryl oleate). $(C_{17}H_{33}COO)_3C_3H_5$; m.w. 884.81; col. oil.; m.p. −17; b.p. 240 [18]; i.w.; s.al.

glycerol, tripalmitate (tripalmitin; palmitin). $(C_{15}H_{31}COO)_3C_3H_5$; m.w. 806.76; col. need. f.et.; m.p. 65.1; b.p. 310-20; i.w.

glycerol, tristearate (stearin; tristearin). $(C_{17}H_{35}COO)_3C_3H_5$; m.w. 890.86; col. cr. f.et.; m.p. 54.5; i.w.; s.al.

glycerophosphate. Salt of glycerophosphoric acid; e.g. calcium glycerophosphate, $CaC_3H_5(OH)_2PO_4$; used in medicine.

glycerophosphoric acid (glycerolphosphoric acid). $C_3H_5(OH)_2OPO_3H_2$; m.w. 172.09; col. oily. liq.; m.p. −20; s.w.; s.al.

glyceryl α-chlorohydrin. See 1, 2-propanediol, 3-chloro-.

glyceryl esters. See under glycerol.

glyceryl ether. See glycerol ether (of Berthelot and de Luca).

glyceryl monoricinoleate. See glycerol, monoricinoleate.

glyceryl monostearate. See glycerol, monostearate.

glyceryl nitrate. See nitroglycerin.

glyceryl phthalate. $C_{11}H_{10}O_6$; m.w. 222.08; light straw colored resin; m.p. 67; s.al.; i.w.; synthetic resin for varnishes, lacquers, etc.

glyceryl stearic ester. See glycerol tristearate.

glyceryl tristearate. See glycerol, tristearate.

glycidol (2, 3-epoxy-1-propanol; epihydric alcohol; glycide). $OCH_2CH(__)CH_2OH$; m.w. 74.05; col. liq.; s.w.; s.al.

glycine (aminoacetic acid; aminoethanoic acid; glycocoll). NH_2CH_2COOH; m.w. 75.05; wh. monocl.; s.w.

glycine, N-(p-acetamidophenyl)- ([p-acetamidoanilino] acetic acid). $CH_3CONHC_6H_4NHCH_2COOH$; m.w. 208.11; m.p. 241-2.

glycine, N-acetyl. See aceturic acid.

glycine, N-acetyl-N-phenyl-. See aceturic acid, N-phenyl-.

glycine, N-(p-aminophenyl)- ([p-aminoanilino] acetic acid). $NH_2C_6H_4NHCH_2COOH$; m.w. 166.09; leaf.; s.w.

glycine anhydride (2, 5-piperazinedione; α, γ-diacipiperazine; diglycolyl diamide). $NHCOCH_2NHCOCH_2$; m.w. 114.06; tab.; s.w.; s.al.

glycine, N-benzoyl-. See hippuric acid.

glycine, N-carbamyl-. See hydantoic acid.

glycine, N-ethyl- ([ethylamino] ethanoic acid; [ethylamino] acetic acid; n-ethylglycocoll). $C_2H_5NHCH_2COOH$; m.w. 103.08; leaf. f.al.; s.w.; s.al.

glycine, p-hydroxyphenyl-. $HOC_6H_4NHCH_2COOH$; m.w. 167.07; wh. cryst.; m.p. 241 with decomp.; s.w.; photographic developer.

glycine, N-di-leucyl-. $(CH_3)_2CHCH_2CH(NH_2)CONHCH_2COOH$; m.w. 188.14; cr.f.w.; s.al.

glycine, N-methyl-. See sarcosine.

glycine, methyl ester (methyl aminoethanoate). $NH_2CH_2COOCH_3$; m.w. 89.06; col. liq.

glycine, N-o-nitrophenyl-. $NO_2C_6H_4NHCH_2COOH$; m.w. 196.08; dk. red cr. f.al.; s.w.; s.al.

glycine, N-phenyl- (anilinoacetic acid). $C_6H_5NHCH_2COOH$; m.w. 151.08; col. cr.; m.p. 127; s.w.; s.al.

glycine, N-phenyl, o-carboxylic acid. See anthranilic acid, N-(carboxymethyl)-.

Glyco-ester. Glycol acetate.

glycocholic acid. $C_{24}H_{39}O_4NHCH_2COOH$; m.w. 465.34; col. need.; m.p. 134; s.al.

glycocoll. See glycine.

glycocoll, methyl-. See betaine.

glycocyamidine, 1-methyl-. See creatinine.

glycocyamine (guanidoacetic acid). $NH_2C(:NH)NHCH_2COOH$; m.w. 117.08; leaf. or need. f.w.; s.al.

glycocyamine, methyl-. See creatine.

glycogen (animal starch). $(C_6H_{10}O_5)_x$; m.w. (162.07)$_x$; wh. amor.; m.p. 240; s.w.; s.al.

glycogenic acid. See d-gluconic acid.

glycol. See dihydric alcohol.

glycol (1, 2-ethanediol; ethylene glycol). CH_2OHCH_2OH; m.w. 62.05; col. liq.; m.p. −17.4; b.p. 197.2; s.w.; s.al.

glycolaldehyde (hydroxyethanal; glycolic aldehyde). CH_2OHCHO; m.w. 60.03; col. pl.; m.p. 97; s.w.; s.al.

glycolamide (2-hydroxyethanamide; hydroxyacetamide). $CH_2OHCONH_2$; m.w. 75.05; col. rhomb.; m.p. 120; s.w.; s.al.

glycol, α-butylene. See 1, 2-butanediol.

glycol, β-butylene. See 1, 3-butanediol.

glycol, cyanohydrin. See hydrocrylonitrile.

glycol, decamethylene. See 1, 10-decanediol.

glycol, diacetate (ethylene acetate). $(CH_3OOCCH_3)_2$; m.w. 146.08; col. liq.; m.p. −31; b.p. 186; s.w.; s.al.

glycol, dibenzoate (ethylene benzoate; ethylene dibenzoate). $(C_6H_5COO)_2C_2H_4$; m.w. 270.11; rhomb. pr.f.et.; m.p. 73-4; i.w.

glycol, dibromide. See ethylene bromide.

glycol, dibutyrate (ethylene butyrate). $(CH_3OOCCH_2CH_2CH_3)_2$; m.w. 202.14; liq.; b.p. 240; i.w.; s.al.

glycol, dichloride. See ethylene chloride.

glycol, diethylene. See diethylene glycol.

glycol, diformate (ethylene formate). $HCOOCH_2CH_2OOCH$; m.w. 118.05; b.p. 174; s.w.; s.al.

glycol, diiodide. See ethylene iodide.

glycol, dilaurate (ethylene laurate). $(C_{11}H_{23}COOCH_2)_2$; m.w. 426.39; m.p. 50-2; b.p. 188 [20]; i.w.; s.al.

glycol, dimethoxytetra-. $(CH_3OC_2H_4OC_2H_4)_2O$; m.w. 222; sp.gr. 1.0132; b.p. 275.8; s.w.; the dimethyl ester of tetraethylene glycol; stable, water-white; a solvent, plasticizer and neutral reaction medium.

glycol dimethoxy tetraethylene-. $O(CH_2-CH_2-O-CH_2CH_2-OCH_3)_2$; m.w. 222.17; colorless liq.; sp.gr. 1.0132 at 20/20°; m.p. −21.4; b.p. 275.8 at 760; s.w.; plasticizer.

glycol, sym-dimethyl-. See 2, 3-butanediol.

glycol, uns-dimethyl-. See 1, 2-propanediol, 2-methyl-.

glycol, sym-dimethylethylene. See 2, 3-butanediol.

glycol, dimyristate (ethylene myristate). $(C_{13}H_{27}COOCH_2)_2$; m.w. 482.45; cr.; m.p. 62-3.

glycol, dinitrate (ethylene nitrate). $C_2H_4(ONO_2)_2$; m.w. 152.05; yel. liq.; m.p. −20; i.w.; s.al.

glycol, dinitrite (ethylene nitrite). $C_2H_4(ONO)_2$; m.w. 120.05; liq.; m.p. < −15; b.p. 98; i.w.; s.al.

glycol, dipalmitate (ethylene palmitate). $(C_{15}H_{31}COOCH_2)_2$; m.w. 538.51; leaf. or need.; m.p. 68.7; b.p. 226; i.w.

glycol, diphenyl ether. See ethane, 1, 2-diphenoxy-.

glycol, dipropionate (ethylene propionate). $(CH_3CH_2COOCH_2)_2$; m.w. 174.11; liq.; b.p. 211; s.w.; s.al.

glycol, dipropylene. $CH_3CHOHCH_2OCH_2CHOHCH_3$; m.w. 134; sp.gr. 1.0224; b.p. 229.2; s.w.

glycol, distearate (ethylene stearate). $[CH_3(CH_2)_{16}COOCH_2]_2$; m.w. 594.58; leaf.; m.p. 76-7; b.p. 241 [20]; i.w.

glycol, dithio-. See 1, 2-ethanedithiol.

glycol, dithiocyanate (ethylene [di]thiocyanate). $(CH_2SCN)_2$; m.w. 144.17; col. rhomb. pl. or need.; m.p. 90; s.w.; s.al.

glycol, ethyl-. See 1, 2-butanediol.

glycol, ethylene. See glycol.

glycol, ethylene ether. See p-dioxane.

glycol, ethylethylene. See 1, 2-butanediol.

glycol, ethylidene diether. See 1, 3-dioxolane, 2-methyl-.

glycol, ethyl methyl. See 2, 3-pentanediol.

glycoleucine. See norleucine.

glycol, heptamethylene. See 1, 7-heptanediol.

glycolic acid (hydroxyethanoic acid; hydroxyacetic acid). $HOCH_2COOH$; m.w. 76.03; rhomb. leaf. f.et.; m.p. α 63; β 79; s.w.; s.al.

glycolic acid, benzoyl- (α-hydroxy-β-ketohydrocinnamic acid; 2-hydroxy-3-oxo-3-phenylpropanoic acid). $C_6H_5COCH(OH)COOH$; m.w. 180.06; lng. pr.; fm.p. 125; s.w.; s.al.

glycolic acid, butyl phthalyl butyl-. $C_6H_4(COOC_4H_9)COOCH_2COOC_4H_9$; m.w. 336.19; slightly col. liq.; sp.gr. 1.0956; b.p. 219 [6]; solvent-plasticizer for cellulose nitrate.

glycolic acid, diphenyl-. See benzilic acid.

glycolic acid, ethyl ester (ethyl hydroxyethanoate). $CH_2OHCOOC_2H_5$; m.w. 104.06; col. liq.; b.p. 160; s.al.

glycolic acid, ethyl ester, acetate. $C_6H_{10}O_4$; m.w. 146.08 colorl. liq.; sp.gr. 1.094; b.p. 181-195; f.p. 82; used as solvent for cellulose nitrates, acetates, and dyestuffs.

glycolic acid ethyl ether. See acetic acid, ethoxy-.

glycolic acid, ethyl methyl phthalyl-. See methylphthalyl ethyl glycolate.

glycolic acid, methyl ester (methyl hydroxyethanoate; methyl glycolate). $CH_2OHCOOCH_3$; m.w. 90.05; col. liq.; b.p. 151.2; s.w.; s.al.

glycolic acid, methylo-. See acetic acid, methoxy-.

glycolic acid, phenyl-. See mandelic acid.

glycolic acid phenyl ether. See acetic acid, phenoxy-.

glycolic acid, styryl-. See 3-butenoic acid, 2-hydroxy-4-phenyl-.

glycolic acid, thio-. See acetic acid, mercapto-.

glycolic aldehyde. See glycolaldehyde.

glycolic anhydride. $(CH_2OHCO)_2O$; m.w. 134.05; cr. powd.; m.p. 130; s.w.; i.al.

glycolide (2, 5-p-dioxanedione; diglycolide). $OCOCH_2OCOCH_2$; m.w. 116.03; col. leaf. f.al.; m.p. 86-7; s.w.; s.al.

glycol, α-isoamylene. See 1, 2, butanediol, 3-methyl-.

glycol, β-isoamylene. See 2, 3-butanediol, 2-methyl-.

glycol, γ-isoamylene. See 1, 3-butanediol, 3-methyl-.

glycol, isopropyl-. See 1, 2-butanediol, 3-methyl-.

glycol, isopropylethylene. See 1, butanediol, 3-methyl-.

glycollic acid. See glycolic acid.

glycol, γ-methyltrimethylene. See 3-butanediol.

glycol, monoacetate. $CH_3COOCH_2CH_2OH$; m.w. 104.06; col. liq.; b. 182; s.w.; s.al.

glycol, monobenzyl ether. See ethanol, 2-benzyloxy-.

glycol, monobutyl ether. See ethanol, 2-butoxy-.

glycol, monoethyl ether. See ethanol, 2-ethoxy-.

glycol, monoformate (β-hydroxyethyl formate). $HCOOCH_2CH_2OH$; m.w. 90.05; liq.; b.p. 180; s.w.

glycol, monomethyl ether. See ethanol, 2-methoxy-.

glycol, monomethyl ether acetate. See ethanol, 2-methoxy-, acetate.

glycol, monopalmitate. $C_{15}H_{31}COOCH_2CH_2OH$; m.w. 300.28; cr.; m.p. 51.5; s.al.

glycol, monostearate. $C_{17}H_{35}COOCH_2CH_2OH$; m.w. 328.31; cr.; m.p. 58.5; s.al.

glycol, nonamethylene. See 1, 9-nonanediol.

glycol, octamethylene. See 1, 8-octanediol.

glycol, octylene. See 4, 5-octanediol.

glycol oleate. See diethylene glycol dioleate.

glycol, pentamethylene. See 1, 5-pentanediol.

glycol, γ-pentylene. See 1, 4-pentanediol.

glycol phthalate. $C_{12}H_{12}O_4$; m.w. 236. brown liq.; s.al., i.w.; lacquer plasticizers; fixative and bodying agent for essential oils.

glycol, pseudobutylene. See 2, 3-butanediol.

glycol, tetraethyl-. See 3, 4-hexanediol, 3, 4-diethyl-.

glycol, tetramethyl-. See pinacol.

glycol, tetramethylene. See 1, 4-butanediol.

glycol, tetraphenyl-. See benzopinacol.

glycol, tetraphenylethylene-. See benzpinacol.

glycol, thiodi-. See ethanol, 2, 2-thiodi-.

glycol, tribromoethylidene-. See bromal hydrate.

glycol, triethylene. See triethylene glycol.

glycol, trimethyl-. See 2, 3-butanediol, 2-methyl-.

glycol, trimethylethylene. See 2, 3-butanediol, 2-methyl-.

glycoluric acid. See hydantoic acid.

glycoluril (acetylenediurein). $C_4H_6(CON_2H_2)_2$; m.w. 142.08; wh. need. f.w.; s.al.

glycol, xylylene. See xylylene glycol.

glyconic acid. See gluconic acid.

Glycopon. Compounds which may be polyalkyl glycols, ethers or the condensation products with organic acids, used in food industry, plastics and paints, as solvents, etc.

glycoprotein [glucoprotein (B)]. Protein plus carbohydrate group, e.g. mucin.

glycosterin. See diethylene glycol distearate.

glycosuria. Abnormally high proportion of sugar in the urine.

glycyrrhiza (licorice). The evaporated extract of Glycyrrhiza glabra or glandulifera, used in medicine and as a flavoring.

glyoxal (ethanedial; oxaldehyde; biformyl). $CHOCHO$; m.w. 58.02; yel. cr.; m.p. 15; b.p. 50.4; s.w.; s.al.

glyoxal, di-2-furyl-. See furil.

glyoxal, dimethyl-. See 2, 3-butanedione.

glyoxal, dioxime. See glyoxime.

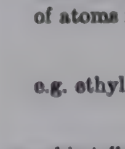
glyoxal, diphenyl-. See benzil.

glyoxyldiureide. See allantoin.

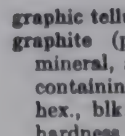
oxalic acid. See glyoxylic acid.
oxaline. See imidazole.
oxaline, benzo-. See benzimidazole.
oxaline, N-methyl-. See imidazole, 1-methyl-.
oxaline, 2-phenyl benzol-. See benzimidazole, 2-phenyl-.
oxime (glyoxal dioxime). HON:CHCH:NOH; m.w. 88.05; rhomb. tab. f.w.; m.p. 178; s.w.; s.al.
oxime, dimethyl- (2, 3-butanedione dioxime; diacetyl dioxime). $CH_3C(:NOH)C(:NOH)CH_3$; m.w. 116.08; col. cr. f.dil.al.; m.p. 234.5; i.w.; s.al.
oxyldiureide. See allantoin.
oxylic acid (oxoethanoic acid; glyoxalic acid; oxalaldehydic acid). HCOCOOH; m.w. 74.02; col. rhomb.; s.w.; s.al.
oxylic acid, o-aminophenyl-. See isatic acid.
oxylic acid, o-carboxyphenyl-. See phthalonic acid.
oxylic acid, o-nitrophenyl- (o-nitrobenzoylformic acid). $NO_2C_6H_4COCOOH$; m.w. 195.05; need. f.w.; m.p. 46-7; s.w.
lyoxylic acid, phenyl- (benzoyl formic acid). $C_6H_5COCOOH$; m.w. 150.05; col. cr. f. CCl_4; m.p. 66; b.p. 147-51 ^{12}; s.w.; s.al.
lyoxylic acid, 2-thienyl-. See 2-thiopheneacetic acid, α-keto-.
Glyptal. Synthetic resin made by heating together phthalic anhydride and glycerin, used in paints, varnishes, lacquers, as a shellac substitute, etc.
gneiss. A mica-containing mineral of granite character.
gnoscopine (dl-narcotine). $C_{22}H_{23}NO_7$; m.w. 413.19; lng. need.; m.p. 229.
goethite. A hydrous oxide of iron, $Fe_2O_3 \cdot H_2O$; the chief constituent of rust.
gold. Au; at. wt. 197.2; cub. yel., coll. bl. vlt.; s.g. 19.3, lq. 17.0 ^{1063}; m.p. 1063; b.p. 2600. i.w.; valence 1 or 3; a metallic element, occurring native and combined; yellow when in mass; black, ruby or purple when finely divided; the most malleable and ductile, also one of the softest of metals; used chiefly in coinage and jewelry; unaffected by air and most reagents.
gold beater's skin. The treated outer membrane of the intestinal tube of the ox; a light touch skin used by gold beaters and in lighter-than-air craft, being practically impermeable to hydrogen and helium.
gold bromide(ic). $AuBr_3$; m.p. 436.95; gray powd.
gold bromide(ous). AuBr; m.w. 277.12; yelsh.-gray mass; m.w. 7.9; s.w.
gold bromide(ous, ic). Au_2Br_4; m.w. 714.06; blk.
gold chloride(ic). $AuCl_3$; m.w. 303.57; yel.-red. deliq. leaf; s.g. 3.9; s.w.; s.al.
gold chloride(ic) (hydrated). $AuCl_3 \cdot 2H_2O$; m.w. 339.60; or. cr.; s.w.; s.al.
gold chloride(ous). AuCl; m.w. 232.66; yel. cr.; s.g. 7.4.
gold chloride(ous, ic). Au_2Cl_4; m.w. 536.23; dk. red.; s.g. 5.1.
gold, coin. Alloy of gold 90% and copper 10% (U.S.A.). Alloy of gold 91.67% and copper 8.33% (British).
gold cyanide(ic). $Au(CN)_3 \cdot 6H_2O$; m.w. 383.32; col. hyg. pl.; s.w.; s.al.
gold cyanide(ous). AuCN; m.w. 223.21; lt. yel. cr. powd.; s.g. 7.12; s.w.; i.al.
gold, filled. See rolled gold.
gold, fine. Pure gold; 24-Karat.
gold, green. Gold plus silver with little or no copper.
gold hydrogen nitrate(ic). $AuH(NO_3)_4 \cdot 3H_2O$; m.w. 500.29; tricl. oct. yel.; s.g. 2.84.
gold hydroxide(ic). $Au(OH)_3$; m.w. 248.22; yel.-br. powd.; m.p. $-1\frac{1}{2}H_2O$ 250; i.w.
gold hydroxide(ous). AuOH; m.w. 214.21; dk. vlt.; m.p. $-H_2O$ 200; s.w.
gold iodide(ic). AuI_3; m.w. 577.96; dk. grn.; i.w.
gold iodide(ous). AuI; m.w. 324.12; grnsh.-yel. powd.; s.g. 8.25; s.w.

gold leaf. Extremely fine layers of gold formed by beating between layers of gold beater's skin; used for gilding works of art, fabrics, books, etc.
gold, mosaic. See mosaic gold.
gold, native. Gold as it occurs naturally; cub., yel.; sp.gr. 14.56-19.33; hardness 2.5-3.0, rarely pure, being usually alloyed with silver and containing sometimes appreciable amounts of copper, palladium, or bismuth.
gold number. The quantity, in milligrams, of a protective colloid which prevents 10 cc. of a red gold sol (0.5-0.06 g. gold per liter) from coagulation by the rapid addition of, 1 cc. of 10% salt solution.
gold oxide(ic). Au_2O_3; m.w. 442.40; br.-blk. powd.; m.p. −O 160; b.p. −3O 250; i.w.
gold oxide(ous). Au_2O; m.w. 410.40. gray-violet; s.g. 3.6; m.p. −O 205; i.w.; i.al.
gold oxide(ous, ic). Au_2O_2; m.w. 426.40.
gold phosphide. Au_3P_3; m.w. 487.46; gray.; s.g. 6.67.
gold point. Melting point of pure gold, 1064° C., used as one of the fixed reference points on the temperature scale.
gold potassium bromide. $AuBr_3 \cdot KBr \cdot 2H_2O$; m.w. 592.00; violet cr.; s.w.; s.al.
gold potassium chloride. $AuCl_3 \cdot KCl \cdot 2H_2O$; m.w. 414.16; rhomb. pl. yel.; s.w.; s.al.
gold potassium cyanide. $AuK(CN)_2$; m.w. 288.32; col. rhomb.; s.g. 3.45; s.w.; s.al.
gold potassium iodide. $AuI_3 \cdot KI$; m.w. 743.98; lust. blk. cr.
gold, red. Gold plus copper with little or no silver.
gold, rolled. See rolled gold.
gold selenide. Au_2Se_3; m.w. 632.00; s.g. 4.65 ^{22}.
gold size. Medium for affixing metallic decorative powders to surfaces.
gold sodium bromide. $AuBr_3 \cdot NaBr \cdot 2H_2O$; m.w. 575.89; br.-blk. cr.; s.w.
gold sodium chloride. $AuNaCl_4 \cdot 2H_2O$; m.w. 398.06; rhomb. yel.; s.w.; s.al.
gold sodium cyanide. $AuNa(CN)_2$; m.w. 272.21; wh. cr. powd.; s.w.
gold sodium thiosulfate. $AuNa_3(S_2O_3)_2 \cdot 2H_2O$; m.w. 526.46; wh. odorl. cr.; s.w.; i.al.

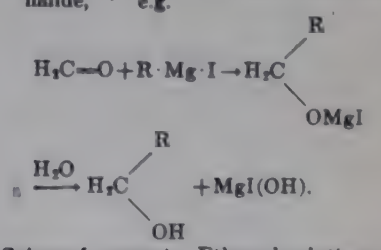
gold sulfate(ic). $Au_2O_3 \cdot 2SO_3 \cdot H_2O$; m.w. 620.54; yel. deliq.; s.w.
gold sulfide(ic). Au_2S_3; m.w. 490.58; br.; s.g. 8.754; i.w.
gold sulfide(ous). Au_2S; m.w. 426.46; br.-blk. powd.; i.w.
gold sulfide(ous, ic). AuS; m.w. 229.26; blk.; i.w.
gold telluride (calaverite). AuTe; m.w. 324.70; tricl., s.g. 9.04.
gold telluride. Au_2Te_4; m.w. 904.40; m.p. 472.
gold, white. See white gold.
gold, yellow. Alloy of gold, silver and copper in about equal parts.
golden seal. See hydrastis.
goldfieldite. A natural sulfantimonide of copper, part of the antimony may be replaced by arsenic and bismuth, part of the sulfur by tellurium.
Goldschmidt process. Same as the thermit process (q.v.); used for obtaining chromium, iron, silicon, etc. from their oxides.
gommelin. See dextrin.
goniometer. An instrument for measuring interfacial angles of crystals.
Gooch crucible. A porcelain crucible with a perforated bottom upon which a layer of asbestos fibers is laid; used to filter paper-attacking solutions.
goslarite (zinc vitriol). A mineral, $ZnSO_4 \cdot 7H_2O$; rhomb., wh. or yelsh., sp.gr. 1.9-2.1; hardness 2.0-2.5.
gossypium. Cotton, $(C_6H_{10}O_5)_n$; m.w. $(162.08)_n$; the hairs of the seed of the cultivated varieties of the Gossipium species, freed from impurities and fatty matter; white, soft, hollow, twisted filaments; used in textiles and medicinal dressings.
göthite. A mineral, $Fe_2O_3 \cdot H_2O$; rhomb., yel., red, or br.; sp.gr. 4.0-4.4; hardness 5.0-5.5.
Goulac. Concentrated sulfite pulp process waste, br. pd.; s.w.; used as binder.
governor. Device which regulates speeds of machines, motors, etc.
gradient. Rate of inclination of a line with the horizontal.
graduate. To divide into regular divisions of length, volume, etc.; name often applied to a graduated measuring cylinder.
Graham's law of diffusion. The rate of diffusion of a gas is inversely proportional to the square root of its density.
grahamite. Asphaltic bituminous mixture; sp.gr. 1.15-1.50; bl.; soluble in carbon disulfide.
grain (Apothecary). $\frac{1}{480}$th of an ounce.
grain alcohol. See ethyl alcohol.
graining. Process of separating soap from water and glycerin during manufacture.
grains of paradise (melleguetta, guinea pepper). The fruit of the plant amomum melleguetta, used in medicine and as a condiment.
gram (gramme). Metric unit of mass, $\frac{1}{1000}$th of the standard kilogram at the International Bureau of Weights and Measures, at Paris.
gram atom (gram atomic weight). Atomic weight (q.v.) of an element expressed in grams.
gram-calorie. The amount of heat required to raise the temperature of 1 gram of water one degree Centigrade, 4.184×10^7 ergs.
gram-equivalent. See equivalent weight.
gram-ion. Atomic or molecular weight of an ion in grams.
gram-mol. See mol.
gram molecular weight. See mol.
graminis citrati oil. See oil, lemon grass.
grammatite. See tremolite.
gramme. See gram.
Gramme ring. Electromagnet having a continuous iron ring as its core.
granatonine, methyl-. See pseudopelletierine.
granite. Igneous holocrystalline acid rock; a mixture of feldspar, mica and quartz; m.p. 1,100-1,240; used in building and paving.
granite, giant. See pegmatite.
granular sorbite. In steel, an aggregate of ferrite and cementite particles larger than those present in granular troosite and resulting from the heating of martensite to temperatures from 400-700° C.
granular troosite. In steel an aggregate of ferrite and cementite particles resulting from the heating of martensite to temperatures generally not in excess of 400° C.
grape seed oil. See oil, grape seed.
grape-stone oil. See oil, grape seed.
grape sugar. See d-glucose.
graphic formula. Formula written to show the probable spatial arrangement of atoms in a molecule of a compound,



e.g. ethyl alcohol,



graphic tellurium. See sylvanite.
graphite (plumbago, black lead). A mineral, a crystalline form of carbon, containing traces of Fe, SiO_2, etc.; hex., blk., dk. gray; sp.gr. 2.09-2.25; hardness 1-2; used chiefly as a refractory material with fire-clay to make crucibles, etc., also in lubricants and pencils.
graphite, colloidal. Graphite ground in oil or water to give a colloidal suspension.
graphite marks. Objectionable black marks found on circular knit rayon fabrics due to iron oxide from machinery.
graticule. Fine lines scratched on glass plate, replacing spider threads or fine wires.
grating (diffraction grating). Arrangement for dispersing light or other wave emissions by interference.
gravitation. Universal attraction existing between all material bodies, the magnitude of the force being directly proportional to the product of the masses and inversely to the distance between.
gravity cell. Electrolytic primary cell having a two phase electrolyte of different specific gravities.
gray acetate. Crude calcium acetate.
gray copper ore. See tetrahedrite.
gray manganese ore. See manganite.
grease. A variety or mixture of lard, tallow, bone fat, fish stearine, aluminum or lead soap, having a butter-like consistency and used for lubrication.
grease, cold-neck. Black lime grease used on "cold" steel rolling-mill necks.
grease, cup. Homogeneous boiled mixture of mineral oil (80-90%) and saponified fat (10-20%).
grease paint. A mixture of French chalk, a pigment and a carrier (usually glycerol, lard or pomade).
Greek alphabet. *See separate section after the abbreviations.*
green acid (green sulfonate, green sulfonic acid). Complex crude mixture of sulfonic acids, from petroleum refining sludge, that is readily soluble in water, alcohols and benzene.
green carbonate of copper. See malachite.
green hide. Hide freshly removed from an animal.
green lead ore. See pyromorphite.
green oil. See oil, green.
green, permanent. See Guignet green.
green salted hide. Hide into which salt has been rubbed on the flesh side.
green sand. Foundry sand wet with water.
green soap. See soap, green.
green sodium sulfonate. See sodium sulfonate, green.
green sulfonate. See green acid.
green sulfonic acid. See green acid.
green toner. Permanent green lake pigment made from alizarine green.
green vitriol. See copperas.
greenockite. See cadmium sulfide.
Grief Faturan. Synthetic tar-acid resin.
Grenz rays (soft x-rays). X-rays of very long wave length that easily penetrate organic matter but are stopped by small amounts of inorganic matter.
grid. Radio tube part between filament and plate which increases or decreases the stream of electrons depending upon the nature of the charge upon the grid.
Griffith's white. See lithopone.
Grignard reaction. A general method for the synthesis of hydrocarbons involving various types of reactions between compounds and an ethereal solution of an organo-magnesium halide, e.g.



Grignard reagent. Ethereal solution of an organomagnesium halide, e.g. ethyl magnesium iodide, C_2H_5MgI.
grindability. Index of tons per hour that can be pulverized to a stated fineness on a given pulverizer.
grindelia (gum plant, tar wood). Dried leaves and flowers of grindelia, used in medicine.
grinding oil. See oil, grinding.
grit. See grog.

grog (rough stuff, grit). Calcined substances used in ceramics as opening materials.

gross structure. General multiplet structure of the spectrum of an atom.

grossularite (hessonite). A mineral, $3CaO \cdot Al_2O_3 \cdot 3SiO_2$; cub., yel., grn., br., red or wh.; sp.gr. 3.4-3.6; hardness 6.5-7.0.

Grotthus-Draper law. Only radiations of those wave-lengths which are absorbed can produce photochemical changes.

ground coat. Coating applied before graining or glazing coating to give under coating proper background.

ground form. Crystal form having natural faces which intersect the crystal axes.

ground nut oil. See oil, peanut.

ground state. Atomic configuration having lowest energy level and highest stability.

ground water surface. See water table.

grout. Fluid mixture of cement and water with or without sand.

Grüneisen's law. For a metal the ratio of the coefficient of linear expansion to its specific heat at constant pressure is constant at all temperatures.

grünlingite (telluric bismuth). Bi_4S_3Te; m.w. 995.56; pale steel-gray mineral; sp.gr. 7.32.

guaethol, methyl propenyl-. Grayish-wh. cryst., pleasant odor; m.p. 60-62; i.w.; an antioxidant used in textile and sulfonated oils and in pharmaceutical preparations.

guaiac gum. See gum, guaiac.

guaiac resin. See gum, guaiac.

guaiacol (o-methoxyphenol; pyrocatechol monomethyl ether; o-hydroxyanisole). $CH_3OC_6H_4OH$; m.w. 124.06; col. hex. pr.; m.p. 28.2; b.p. 205; s.al.

guaiacol, 4-allyl-. See eugenol.

guaiacol, 5-allyl-. See chavibetol.

guaiacol carbonate (duotal, guaiacyl carbonate, guaiacol ester of carbonic acid, neutral guaiacol carbonate). $(OCH_3 \cdot C_6H_4 \cdot O)_2CO$; m.w. 274.1; m.p. 85-88; i.w.; s.al.

guaiacol, 4-methyl-. See creosol.

guaiacol, 4-propenyl-. See isoeugenol.

guaiacol, 5-vinyl-. See hesperetol.

guaiacum. See gum guaiac.

guaiacyl carbonate. See guaiacol carbonate.

guaiene (2, 3-dimethyl napathalene). $C_{10}H_6(CH_3)_2$; m.w. 156.09; leaf. f.al.; m.p. −20; i.w.; s.al.

guaiole. See tiglaldehyde.

guanajuatite. See bismuth selenide.

guanidine (aminomethanamidine; carbamamidine; aminoformamidine). $NH:C(NH_2)_2$; m.w. 59.06; col. cr.; s.w.; s.al.

guanidine, 1-amino- (guanylhydrazine). $NH_2NHC(:NH)NH_2$; m.w. 74.08; cr.; s.w.; s.al.

guanidine, 1-carbamyl-. See urea, guanyl-.

guanidine, 1-cyano- (dicyan[o]diamide; param). $NH_2C(:NH)NHCN$; m.w. 84.06; rhomb. leaf.; m.p. 205.

guanidine, diphenyl- (melaniline). $NH:C(NHC_6H_5)_2$ or $C_6H_5NHC(:NC_6H_5)NH_2$; m.w. 211.13; monocl. need. f.al.; m.p. 147-8; s.w.

guanidine, diphenyl-, mercaptide with 2-benzothiazolethiol. See under 2-benzothiazolethiol.

guanidine, di-o-tolyl-. $C_{15}H_{17}N_3$; m.w. 239.16; wh. cr.; m.p. 179; s.w.; s.al.

guanidine, guanyl-. See biguanide.

guanidine, nitro-. $NH_2C(:NH)NHNO_2$ (?); m.w. 104.06; yelsh. need. f.w.; m.p. 246-7; s.al.

guidianne, phenyl-o-tolyl-. $C_{14}H_{15}N_3$; m.w. 225.14; wh. cr.; m.p. 129.5-30; s.w.; s.al.

guanidine, 1, 1, 3, 3-tetraphenyl-. $NH:C[N(C_6H_5)_2]_2$; m.w. 363.19; rhomb. f. lgr.; m.p. 130; i.w.; s.al.

guanidine, 1, 1, 3-triphenyl- (β-triphenylguanidine). $HN:C(NHC_6H_5)N(C_6H_5)_2$; m.w. 287.16; regular tab.; m.p. 131; s.w.; s.al.

guanidine, 1, 2, 3-triphenyl- (α-triphenylguanidine). $C_6H_5N:C(NHC_6H_5)_2$; m.w. 287.16; wh. need. or pr.f.al.; m.p. 145; s.w.

guanine (2-aminohypoxanthine). $C_5H_5N_5O$; m.w. 151.08; col. need.; i.w.; s.al.

guano. A fertilizer consisting of the excrement of sea-fowl found on islands off the southwestern coast of South America.

Guantal. Diphenyl guanidine phthalate; an activator for Ureka C and other rubber accelerators.

Gudden-Pohl law. Number of electrons released in photoconductive action of selenium equals the number of radiation quanta absorbed.

Guignet green (Emeraude Green, Viridian, transparent chromium oxide, permanent green, verte emeraude, Mittler's green). Chromic oxide and chromium hydroxide; green amorp. powd.; used as paint pigment.

Guillaume alloy (G metal). Low expansion alloy, 66% iron and 34% nickel.

Guldberg's rule. The boiling point in degrees absolute at one atmosphere pressure equals ⅔ of the critical temperature.

Guerbet reaction. Process of condensing alcohols at high temperatures under the influence of sodium.

guaethol, propenyl-. See propenyl guaethol.

gulf solvent. Petroleum solvent; b.p. 154-202.2° C.

gum. Viscous vegetable secretion which hardens but, unlike a resin, is water soluble; name often applied in varnish industry to natural resins.

gum, acacia. See gum arabic.

gum accroides (black boy gum; red gum; yucca gum). Yel. or red powd. or lumps; s. hot. al.; used in sealing wax, varnish, wood stains; derived from xanthorrhea trees in Australia.

gum, ammonia. See ammonia gum.

gum, ammoniac. See ammonia gum.

gum, animi. See gum, tragacanth.

gum, animic. See gum, Zanzibar.

gum arabic (acacia gum, senegal gum). Yel. or white powd. or lumps; s.w.; derived from dried juice exudate of leguminous tree in near East; used in adhesives, polishes, water paints, food products, inks, ceramics, leather, etc.

gum asphaltum. Natural brown-black amorphous solid used in manufacture of varnishes, paints, lacquers, cements, transfer inks, mineral rubber and rubber filler; as a general waterproofing agent; in lithography and making tanks water-tight.

gum, bassora. A gum allied to and substituted for tragacanth gum.

gum, batavia damar. Sp.gr. 1.04-1.06; i.al.; strong yellow to almost colorless; mfr. of varnishes, printing inks, paints, match heads, plastics, adhesives.

gum, batu. A East Indian damar gum; sp.gr. 1.00-1.05; m.p. 180; i.al.; flatting agent in paints and varnishes; in adhesives, oilcloth.

gum benguela. Semi-fossil copal; m.p. 170; s.al.; used in mfr. of varnishes.

gum benzoin. A pleasant smelling gum obtained from the Styrax benzoin; s.al., i.w.; used in varnish-making, medicine, perfumery, and cosmetics.

gum, black boy. See gum accroides.

gum, black East India. Sp.gr. 1.04; i.al.; very dark but bleaches when applied to surfaces; used in dark colored varnishes, gloss paints, plastics, oilcloth, adhesives.

gum, Boea. A fossil resin of the Manila copal class; sp.gr. 1.07-8; m.p. 148; s.al.; a durable oil varnish resin.

gum, British. See dextrin.

gum catechu. See cutch.

gum, chicle (tuno gum, zapota gum). Dried milk juice of Mimusops balata; grayish-wh. to reddish-br. solid; sp.gr. 1.05; used in mfr. chewing gum, transmission belt dressing; substitute for gutta-percha.

gum, Congo. Yellowish amorphous solid; sp.gr. 1.06-1.07; i.al.; used as amber substitute, in mfg. of varnishes, lacquers, cements, in coating textiles; one of the hardest of the fossil resins.

gum damar (dammar). Yel. wh. amorp. solid; sp.gr. 1.04-1.12; m.p. 120; s.al.; used in mfr. varnishes, lacquers, dry colors, printing inks, linoleum, pyrotechnic and rubber compositions.

gum, East India Macassar. Sp.gr. 1.03; sl.s.al.; fossil damars; used in varnishes, gloss paints, printing ink, plastics, plasters, wax compositions.

gum, East India Singapore. Sp.gr. 1.04; sl.s.al.; red or brownish fossil damars; same applications as gum, East India Macassar.

gum, Elemi. Sp.gr. 1.02-1.08; m.p. 120°; i.w.; s.al.; very soft; an oleoresin obtained from Canarium communis in the Philippines; used in mfr. of paints; as a plasticizer; printing inks; engraving and lithography; in medicine.

gum, ester. Glyceryl, methyl, and ethyl esters of abietic acid (rosin); glycerin derivative: b.p. 290; used in place of copal, damar, and kauri gums in paints, cellulose lacquers, and enamels; used with tung oil in waterproof varnishes.

gum gallipot. A resin obtained from Pinus maritana, similar to Burgundy pitch.

gum gambier. Brown powder extracted from the wood of Unicaria gambir in India; used in mfr. boiler compounds, leather tanning, calico printing and textile dyeing, and in medicine.

gum gamboge. See gamboge, gum.

gum ghatti. Acacia gum; the product derived from Anogeissus latifolia; also those gums produced in India; see gum arabic.

gum, guaiac (guaiacum, guaiac resin). Resin of Guaiacum officinale; sp.gr. 1.2; m.p. 85-90, s.al.; used in medicine and varnishes.

gum, India. See gum karaya.

gum, Juniper. See gum, Sandarac.

gum karaya (India gum). Gummy exudation of Sterculia campanulata; used in mfr. varnishes, lacquers, inks, polishes, in process engraving, coating paper.

gum, kauri. An amber-colored fossil copal; sp.gr. 1.04; m.p. 152; sl.s.al.; used in varnishes, linoleum, cements, amber substitutes.

gum kino. Inspissated juice of Pterocarpus marsupium; used in tanning leather, textile sizing; has a powerful astringent effect.

gum labdanum. See labdanum gum.

gum lac. See shellac.

gum Macassar. A general name for those gums shipped from Macassar.

gum, Manila (Macassar). Gum obtained from Agathis alba; sp.gr. 1.06-7; m.p. 115-121; s.al.; used in mfr. of paints, spirit varnishes, coating materials, plastics, japans, waterproofing compositions, printing inks.

gum, Manila loba (Macassar). Half-hard resins obtained from Agathis alba; sp.gr. 1.03-1.07; m.p. 114-120; s.al.; used in mfr. of paints, spirit varnishes; plastics, japans, driers, waterproofing compositions, adhesives.

gum, mastic (pistachia galls, mastiche, mastix). Semi-hard resin obtained from Pistacia lentiscus; sp.gr. 1.057; s.al.; m.p. 105-120; used in mfr. of spirit varnishes, adhesives, incense, chewing gum, lithographing, and medicine.

gum, mesquite. See mesquite gum.

gum myrrh. Gum resin of myrrh species; sp.gr. 1.12-1.28; s.w., s.a. dentifrice; used in cosmetics, incen paints, varnishes, lacquers, in me cine.

gum, Oriental sweet. See styrax.

gum plant. See grindelia.

gum, Pontianak. A semi-fossil Manila copal obtained from Agath alba; sp.gr. 1.07; m.p. 156-169; s.a. used in mfr. of paints, spirit and varnishes, chewing gum, rubber co positions, adhesives, sizing materia

gum, red. See gum accroides.

gum rosin (pine resin, abietic anhydrid yellow resin). Amorp. solid obtain from distillation of crude turpentin of varied colors; sp.gr. 1.08; m. 100-140; used in mfr. soaps, varni and paint driers, wax composition high speed machine lubricants, prin ing inks, cements, artificial ambe hardening steel, violin bows, in med cine.

gum, Sandarac (juniper gum). So resin obtained from callitris qua rivalvis; sp.gr. 1.05-9; m.p. 135-14 s.al.; used in mfr. of paints, varnish dental cements, incense, eraser linoleum and oilcloth and as a fum gant.

gum, senegal. See gum arabic.

gum, shiraz. A gum used in manu facture of printing pastes for fabric in glues, adhesive preparations, swee meats, pie-fillings, varnishes, and coating photographic paper.

gum, Singapore damar. Sp.gr. 1.0 i.al.

gum, starch. See dextrin.

gum, textile. See textile gum.

gum, thus. See frankincense.

gum, tragacanth. An exudation fro Astragus gummifer; sp.gr. 1.38 swells up in water, half the substan being soluble; used in pharmacy f making emulsions, in adhesives, leath dressing and emulsifying agent.

gum, tuno. See gum, chicle.

gum, varnish. See varnish gum.

gum, wood. See wood gum.

gum, yacca. See yacca gum and gu accroides.

gum, yucca. See gum accroides.

gum, Zanzibar (animi gum). A cop resin found in a "fossil" and a "recent form; used in varnishes; sp.gr. 1.0 m.p. 240.

gum, zapota. See gum, chicle.

gummite. A radioactive minera $(Pb,Ca,Ba)SiU_7O_{13} \cdot 5H_2O$(?); gumlik masses, redsh. yel. to brnsh.; sp.g 3.9-5.16; hardness 2.5-3.0.

gum metal. Alloy of copper and t (9:1).

guncotton. See cellulose hexanitrat

gunk. Insoluble heterogeneous precip tate or residue.

gunpowder. An explosive consisting varying mixtures of saltpeter, sulfu and charcoal.

gutta percha (isonarda percha, isonard gutta). The coagulated latex of th trees of geni palaquium and payena $C_{10}H_{16}$; m.w. 136.12 m.p. 120; i.w i.al.

guvacine. $C_6H_9NO_2$; m.w. 127.08; lus sc.; s.w.; s.al.

guvacin, 1-methyl-. See arecaidine.

gypsum. A mineral, $CaSO_4 \cdot 2H_2O$ monocl., wh.; oft. yel., red, br., blk sp.gr. 2.314-2.328; hardness 1.5-2.0 called selenite when clear and trans parent, alabaster when massive an granular. It is calcined to form plaste of Paris, and is used also in Portlan cement, certain paints, and as fill for paper and cotton.

gypsum, calcined. Gypsum partiall dehydrated by heat, $CaSO_4 \cdot \frac{1}{2}H_2O$.

gyrate. To turn on an axis of rotation

gyroscope. Wheel, mounted in a ring so that its axis can turn in any direc tion, used in steering and balancin devices, e.g. gyrocompass.

H

cid. See 1-naphthol-3, 6-disulfonic cid, 8-amino-.

unction. Cologarithm of probability f a given thermodynamic state of as as a function of co-ordinates of noving molecules of a gas.

ay (H-particle). Proton, or positive ydrogen ion produced by bombardnent of hydrogen or hydrogen compound, with alpha rays or fast positive ons.

arlem oil. See oil, Haarlem.

ber process. The production of ammonia by direct combination of nitrogen and hydrogen at 600° C. nd under 200-300 atmospheres pressure in the presence of catalysts.

em-. See hem-.

ematin. See hematin.

ematopoietic (sanguinific). Blood-producing.

emoglobin. See hemoglobin.

fnium oxide. HfO_2; m.w. 210.60; wh. monocl.; s.g. 9.68; m.p. 2812; i.w.

fnium oxychloride. $HfOCl_2 \cdot 8H_2O$; m.w. 409.64; col.; s.w.

alazone. A white chlorine-bearing powder; a sterilizing agent for water supplies.

lf-cell. Electrolyte, containing ar electrode, which produces a definite but indeterminable potential difference.

lf-tone. In photoengraving, a photographic reproduction which includes intermediate gray tones between black and white, the plate for such work being prepared by etching a plate on which a photograph has been made thru a fine cross-ruled glass screen.

alibut oil. See oil, halibut.

alide. Binary combination of a halogen with another element or group, e.g. KI; CCl_4.

alite (rock salt). A mineral, NaCl; cub., col.-yelsh.; oft. redsh.-bl., gray or blk.; sp.gr. 2.135-2.170; hardness 2.5.

all coefficient. Transverse electric potential gradient set up in a conducting strip, exhibiting the Hall effect, per unit current density per unit magnetic intensity.

all effect. Potential difference created between two edges of a metal strip carrying a longitudinally flowing electric current, when the plane of the strip is placed perpendicularly across a magnetic field.

alloysite. $Al_2O_3 \cdot 2SiO_2 \cdot H_2O$; s.g. 2.0-2.2; w., gr., grn., y., b., r.; a common clay.

allwachs effect. Discharge of a negatively charged body, in a vacuum, under the influence of ultra-violet.

alo rubber. See rubber, halo.

alogen. One of the non-metallic elements of group VII in the periodic chart. These are the elements fluorine, chlorine, bromine, iodine and alabamium, in order of activity.

alogen derivative. Compound formed by the replacement of hydrogen or hydroxyl group in organic compounds by a halogen.

alogenation. The introduction of a halogen, usually chlorine or bromine, into a compound by replacement of hydrogen or hydroxyl group, or by addition.

alogeno-rubber. See halo rubber.

halohydrin. A class of hydroxyl compounds derived from polyhydric alcohols by replacing one or more —OH groups by halogen atoms, e.g.

$$\begin{array}{l} CH_2\text{—}HC\text{—}OH \\ \qquad\quad | \\ \qquad\quad H_2C\text{—}Cl \end{array}$$

haloid. Salt consisting of a halogen combined with a metal.

halotrichite. $(Al_2O_3 \cdot FeO \cdot 4SO_3 \cdot 22H_2O)$; m.w. 1982; yel.; s.g. 1.9.

Halowax. Chlorinated naphthalene.

Halphen test. Color reaction for cottonseed oil obtained by the addition of amyl alcohol, carbon disulfide and 1% sulfuric acid. Positive reaction is a reddish color on heating.

hamamelis (witch-hazel; winter bloom; snapping hazel; striped alder; tobacco wood; wych-hazel). Derived from the dried leaves, bark and twigs of Hamamelis virginiana; used in medicine and toilet preparations.

hambergite. A mineral, Be_2HBO_4; rhomb., grayish wh.; sp.gr. 2.347-2.36; hardness 7.5; see also beryllium borate, ortho-, basic

Hamburg blue. See Prussian blue.

Hamburg white. A paint pigment consisting of white lead and barytes (1:2).

hank. A unit of yarn length, the length varying with different fibers; the number of 840-yd. hanks per pound avoirdupois.

hanksite. A mineral, $9Na_2SO_4 \cdot 2Na_2CO_3 \cdot KCl$; hex., wh. to yel.; sp.gr. 2.562; hardness 3.0-3.5.

Hansa oil. See oil, Hansa.

Hanus reagent. Reagent used in the determination of iodine values. A 20% iodine monobromide dissolved in glacial acetic acid.

haptophore. That portion of toxin molecules which bind them to body cells.

hard black. See black, hard.

hard lac resin. See sclerolac.

hard salts, temporary. See alkalinity, secondary.

hard water. Water containing appreciable amounts of dissolved calcium and magnesium salts.

hard water, permanent. Hard water (q.v.) which cannot be "softened" by boiling, contains magnesium or calcium sulfate.

hard water, temporary. Water containing dissolved calcium or magnesium bicarbonates which can be precipitated by boiling.

Harden and Young ester. 1-6 fructofuranose diphosphate.

hardened oil. See oil, hardened.

hardening of oils. See hydrogenation.

hardness. Ability of substances to abrade or indent one another.

hardwood pitch. See pitch, hardwood.

Hardy & Schulze law. The coagulating effect of an ion depends on its valency.

Hares L. Synthetic urea resin.

harmaline. $C_{13}H_{14}N_2O$; m.w. 214.13; rhomb. pr.f.al. + bz.; s.w.; s.al.

harmine. $C_{13}H_{12}N_2O$; m.w. 212.11; monocl. or rhomb. pr.f.al.; s.al.

harmonic. Pertaining to a periodic variation capable of being represented by sine or cosine functions.

harmonic analysis. Function in terms of sines and cosines considering variables with coefficients such that the resulting series are approximately equal to the function for corresponding values of the variables.

harmonic analyzer. Device which determines coefficients of Fourier series corresponding to any function subject to harmonic analysis.

harmonic motion. See simple harmonic motion, and angular harmonic motion.

harmotome (harmotomite). A mineral, $(K_2,Ba)O \cdot Al_2O_3 \cdot 5SiO_2 \cdot 5H_2O$: monocl., wh., gray, yel., red or br.; sp.gr. 2.345-2.50; hardness 4.5.

Hartley law. Separations of components in any one series of doublet or triplet spectral lines, given in frequencies or wave numbers are equal.

Hartree unit. Measure of wave length employed in theory of diffraction of electrons by crystals, equal to 5.3×10^{-10} cm.

hartsalz. See sylvite.

hartshorn. See ammonium carbonate.

hartshorn, spirit of. An alcoholic or aqueous solution of ammonia.

hatchetin. See hatchettite.

hatchettine. See hatchettite.

hatchettite (adipocerite, hatchetin, hatchettine). Hydrocarbon mineral wax; s.g. 0.89-0.98; m.p. 46; yel-wh. to gr.-yel.; darkens on exposure to light.

hauerite. See manganese sulfide(ic).

hausmannite. A mineral, Mn_3O_4; tetr., brnsh.-blk. to blk.; sp.gr. 4.722-4.856; hardness 5.0-5.5.

Haüy law (rational index law). Parameters and Miller indices of a crystal are always rational numbers.

haüynite. A mineral, $5(Na_2,Ca)O \cdot 3Al_2O_3 \cdot 6SiO_2 \cdot 2SO_3$; cub., bl., grn., red, yel.; sp.gr. 2.4-2.5; hardness 5.5-6.0.

Haveg. Synthetic tar-acid resin.

Havegit. Synthetic tar-acid resin.

hawser twist. See twist, hawser.

heads. More volatile impurities which distill first in rectification of alcohol or other solvents.

heat. A form of energy whose addition to a substance causes a rise in temperature, and whose abstraction causes a fall in temperature; the energy due to the kinetic energy of the molecules in matter.

heat capacity. Amount of heat necessary to raise a body or a definite quantity of substance one degree in temperature.

heat function. Heat of emission per mol at constant pressure, minus $\frac{1}{2}$ (gas constant × temperature).

heat, humid. See humid heat.

heat, molar. See molar heat.

heat, molecular. See molecular heat.

heat of adsorption. Quantity of heat evolved in adsorption of a definite quantity of gas on a bare surface.

heat of combustion. The amount of heat evolved when one gram-molecule is burned in oxygen at constant volume.

heat of crystallization. Heat evolved when 1 lb. of a salt crystallizes from a large amount of a saturated solution.

heat of formation. Heat evolved when one gram molecule of a compound is formed from the elements at constant volume.

heat of fusion. See latent heat of fusion.

heat of linkage. The energy necessary to break a chemical bond.

heat of neutralization. Amount of heat evolved when one gram-equivalent of an acid is neutralized by a base.

heat of reaction. Number of gram-calories of heat evolved when the reaction takes place at constant volume, in the direction indicated by, and between, the amounts of substances in an equation.

heat of solution. Heat which is evolved or absorbed when one mol of a substance is dissolved in the definite quantity of a solvent sufficient to produce a solution of a given concentration.

heat of vaporization. Heat absorbed during isothermal vaporization when there is equilibrium between two phases.

heat of wetting. Heat evolved or absorbed when a liquid and a solid surface are placed in contact.

heat, sensible. Heat which can be measured by a thermometer.

heat, specific. See specific heat.

heat tonality. The amount of heat associated with a chemical reaction.

Heaviside layer. See ionosphere.

heavy oil. See oil, heavy.

heavy water (deuterium oxide). Water whose hydrogen atoms are heavy hydrogens of twice the normal atomic weight, or water containing a high percentage of such atoms.

hebronite. See amblygonite.

hecto-. Prefix signifying 100, e.g. a *hecto*liter is 100 liters.

hectowatt. Electrical measure of power, equal to 100 watts.

hedenbergite. $(CaFe)(SiO_3)_2$; gray-gr.; found in Norway and Sweden.

hedeoma (penny royal, squaw mint). Dried leaves and flowers of the hedeoma pulegiodes; used in medicine.

Hefner unit. Measure of intensity of light source, equal to 0.90 International Candle.

hafnium. Hf; at. wt. 178.6; gray; m.w. 13.3; m.p. 2207; b.p. >3200; i.w.; valence 4, a metallic element resembling in crystalline structure and chemical properties the element zirconium, with which it is almost always associated (to the extent of about 5%).

Hehner value. In the analysis of fats, oils and waxes, the percentage of insoluble fatty acids plus the non-saponifiable constituents.

helenin (alantolactone). $C_{15}H_{20}O_2$; m.w. 232.16; wh. need. f.al. + w.; m.p. 76; b.p. 275; s.w.; s.al.

helical angle. Angle formed by any portion of a helix or screw with a line at right angles to its axis.

l-helicin (salicylaldehyde glucoside). $C_6H_4(OC_6H_{11}O_5)CHO$; m.w. 284.12; fine need.; m.p. 175; s.w.; s.al.

helicoid. Resembling a helix.

heliolite. See sunstone.

heliotropin. See piperonal.

heliotropism. Reaction of living organisms to light; chemotaxis induced by light.

helium. He; at. wt. 4.003; col. gas; d. 0.1785° g/l; s.g. lq. $0.147^{-270.5}$; m.p. -272.2 [26 atm.]; b.p. -268.9; i.al.; the lightest of the inert gases, used in lighter-than-air aircraft; obtained by the fractionation of the gas from certain wells and from various radio-

active minerals.

hellebore. Rhizome of herb, helleborus niger, used in medicine.

Helmholtz double layer (electric double layer). Two layers of oppositely charged ions at the boundary or interface between two phases.

helvite. A mineral, $3(Be,Mn,Fe)_3SiO_4 \cdot (Mn,Fe)S$; cub., yel., yelsh. brn., grn., or redsh.-br.; sp.gr. 3.16-3.37; hardness 6.0-6.5.

hematein (haematein; hematin). $C_{16}H_{12}O_6$; m.w. 300.09; br. pl.; s.al.

hematin (haematin). $C_{32}H_{32}FeN_4O_6$; m.w. 592.12; br. powd.; m.p. >200; i.w.; s.al.

hematine extract. Oxidised logwood extract; sp.gr. 1.25; used in tanning leather and dyeing textiles.

hematite. A mineral, Fe_2O_3; hex. (trig.) st. gray-blk., sp.gr. 4.9-5.3; hardness 5.5-6.5.

hematite, black. See psilomelane.

hematite, brown. See limonite.

hematoxylin (haematoxylin). $C_{16}H_{14}O_6 \cdot 3H_2O$; m.w. 356.16; col.-yelsh. tetr. cr. f. dil. $(NH_4)_2SO_3$; m.p. anh. 140; b.p. $-H_2O$, 100-20, s.w.; s.al.

hematoxylon. See logwood.

hemellitene. See hemimellitene.

hemellitic acid (2, 3-dimethylbenzoic acid; 2, 3-xylic acid; vic-o-xylic acid). $(CH_3)_2C_6H_3COOH$; m.w. 150.08; col. pr.f.al.; m.p. 144; s.w.; s.al.

hemiacetal. Unstable compound formed by union of one mol of alcohol with a carbonyl group, e.g. $RCH(OH)OR'$.

hemicellulose. A loose designation for polysaccharides built of sugar molecule remainders and having a lesser resistance to hydrolytic agents than cellulose. See hexosan.

hemicolloid. Colloid consisting of molecules having a mean molecular weight of 2000-10,000; solutions have low viscosities.

hemihedral. Pertaining to a crystal having only half the number of faces necessary to complete a certain symmetry.

hemimellitene (1, 2, 3-trimethylbenzene; vic-trimethylbenzene; hemellitene). $(CH_3)_3C_6H_3$; m.w. 120.09; col. liq.; m.p. <-15; b.p. 176.5; i.w.; s.al.

hemimellitene, 4, 5, 6-trinitro-. $(NO_2)_3C_6(CH_3)_3$; m.w. 255.09; pr.f.al.; m.p. 209; i.w.; s.al.

hemimellitic acid (1, 2, 3-benzenetricarboxylic acid). $C_6H_3(COOH)_3$; m.w. 210.05; col. need.; m.p. 190.

hemimorphic. Pertaining to a crystal having two dissimilar sets of faces at its two ends.

hemimorphite (calamine). A mineral, $2ZnO \cdot SiO_2 \cdot H_2O$, rhomb. wh., yel., br., blsh. or grnsh.; sp.gr. 3.45; hardness 4.5-5.0.

hemipic acid (3, 4-dimethoxyphthalic acid; hemipinic acid; narcotine hemipic acid). $(CH_3O)_2C_6H_2(COOH)_2$; m.w. 210.5; m.p. 186-8; s.w.; s.al.

hemiterpene. See isoprene.

hemlock (conium). The bark of hemlock fir, pinus canadensis, used in tanning and pharmacy.

hemlock extract. Extract made from hemlock bark, used in mfr. of boiler compounds and leather tanning.

hemoglobin. A constituent of the blood. Consists of the protein globin conjugated with an iron-containing, red pigmented substance known as heme or reduced hematin.

hemolysin. Agent which destroys red blood corpuscles.

hemp. A tall plant, Cannabis sativa, cultivated for its fibre, which is taken from the inner bark and used in making cordage.

hempseed oil. See oil, hempseed.

henbane (hyoscyamus, hog's bean, insane root, poison tobacco, black henbane). Dried leaves and flowers of hyoscymus niger, containing the alkaloids hyoscyamine and hyoscine; used in medicine.

henbane, black. See henbane.

hendecanal (undecanal; n-undecylaldehyde). $CH_3(CH_2)_9CHO$; m.w. 170.17; liq.; m.p. -4; b.p. 117 [15]; i.w.; s.al.

hendecanal, oxime. $CH_3(CH_2)_9CH:NOH$; m.w. 185.19; need. f. me. al.; m.p. 72; s.w.; s.al.

hendecane (undecane). $CH_3(CH_2)_9CH_3$; m.w. 156.19; col. liq.; m.p. -26.5; b.p. 195.84; i.w.; s.al.

hendecane, 1-amino-. See hendecylamine.

hendecanoic acid (undecanoic acid; n-undecylic acid). $CH_3(CH_2)_9COOH$; m.w. 186.17; col. sc.; m.p. 29.3; b.p. 228 [100]; i.w.; s.al.

1-hendecanol (1-undecanol; pri-n-undecyl alcohol). $CH_3(CH_2)_9CH_2OH$; m.w. 172.19; cr. or liq.; m.p. 11; b.p. 131 [15]; i.w.; s.al.

2-hendecanol (2-undecanol; methylnonylcarbinol). $CH_3(CH_2)_8CHOH-CH_3$; m.w. 172.19; liq.; m.p. 12; b.p. 228-9; i.w.; s.al.

2-hendecanone (2-undecanone; methyl nonyl ketone). $CH_3CO(CH_2)_8CH_3$; m.w. 170.17; col. arom. liq.; m.p. 15; b.p. 228; i.w.; s.al.

3-hendecanone (3-undecanone; ethyl octyl ketone). $C_2H_5CO(CH_2)_7CH_3$; m.w. 170.17; liq.; m.p. 4.5; b.p. 104-6; i.w.; s.al.

6-hendecanone (6-undecanone; diamyl ketone; dipentyl ketone; (n)-caprone). $CH_3(CH_2)_4CO(CH_2)_4CH_3$; m.w. 170.17; leaf.; m.p. 14-5; b.p. 226; i.w.; s.al.

2-hendecene (2-undecene; β-undecylene). $CH_3CH:CH(CH_2)_7CH_3$; m.w. 154.17; col. liq.; b.p. 193; i.w.; s.al.

9-hendecenoic acid (9-undecenoic acid; o-undecylenic acid). $CH_2CH:CH-(CH_2)_7COOH$; m.w. 184.16; wh. cr. mass or col. to yelsh. liq.; m.p. 24.5; b.p. 295; i.w.; s.al.

hendecylamine (pri-n-undecylamine; 1-aminohendecane). $CH_3(CH_2)_{10}NH_2$; m.w. 171.20; m.p. 16.5; b.p. 234.

heneicosane. $CH_3(CH_2)_{19}CH_3$; m.w. 296.34; cr.; m.p. 40; b.p. 215 [15].

henna (Egyptian privet, flower of paradise, lawsonia alba). Leaves of lawsonia alba, used as a hair dye and in medicine.

henry, absolute. A unit of electrical inductance equal to 1.11263×10^{-12} e.s.u.; 1×10^9 e.m.u. or abhenries; 0.99948 International henry.

Henry's law. The mass of gas dissolved by a given volume of liquid at constant temperature is proportional to the pressure of the gas.

hentriacontane (n-hentriacontane). $CH_3-(CH_2)_{29}CH_3$; m.w. 436.50; cr.; m.p. 68.1; b.p. 302 [15].

16-hentriacontanone (dipentadecyl ketone; palmitone). $(C_{15}H_{31})_2CO$; m.w. 450.48; leaf. f.al.; m.p. 82.8; i.w.; s.al.

heptacosane (n-heptacosane). $CH_3-(CH_2)_{25}CH_3$; m.w. 380.44; cr.; m.p. 59.5; b.p. 270 [15]; i.w.; s.al.

heptadecane (n-heptadecane). $CH_3-(CH_2)_{15}CH_3$; m.w. 240.28; hex. leaf.; m.p. 22.5; b.p. 303; i.w.; s.al.

9-heptadecane. carboxylic acid. See capric acid, α-octyl-.

heptadecanenitrile. See margaronitrile.

heptadecanoic acid. See margaric acid.

1-heptadecanol (pri-n-heptadecyl alcohol). $CH_3(CH_2)_{16}OH$; m.w. 256.28; cr.; m.p. 53.31; i.w.; s.al.

9-heptadecanone (di-n-octyl ketone; pelargone; nonylone). $(C_8H_{17})_2CO$; m.w. 254.27; pl. f. me. al.; m.p. 53; s.al.

n-heptadecoic acid. See margaric acid.

pri-n-heptadecyl alcohol. See 1-heptadecanol.

n-heptadecylic acid. See margaric acid.

2, 4-heptadiene. $CH_3CH:CHCH:CH-CH_2CH_3$; m.w. 96.09; liq.; b.p. 107.

1, 6-heptadiene-3, 5-dione, 1, 7-bis (4-hydroxy-3-methoxyphenyl)-. See curcumin.

2, 5-heptadien-4-one, 2, 6-dimethyl-. See phorone.

n-heptaldehyde. See enanthaldehyde.

n-heptaldoxime. See enanthaldehyde, oxime.

heptamethylene. See cycloheptane.

heptamethylene glycol. See 1, 7-heptanediol.

heptanal. See enanthaldehyde.

heptane (n-heptane). $CH_3(CH_2)_5CH_3$; m.w. 100.12; col. liq.; m.p. -90.5; b.p. 98.4; s.al

heptane, 1-bromo- (n-heptyl bromide). $CH_3(CH_2)_6Br$, m.w. 179.03; col. liq.; m.p. -56.86; b.p. 178.8; i.w.; s.al.

3-heptanecarboxylic acid. See caproic acid, α-ethyl.

heptane, 1-chloro- (n-heptyl chloride). $CH_3(CH_2)_6Cl$; m.w. 134.57; liq.; m.p. -69.5; b.p. 159.5; i.w.; s.al.

1, 7-heptanedicarboxylic acid. See azelaic acid.

heptane, 2, 6-dimethyl- (diisobutylmethane; isobutylisoamyl). $(CH_3)_2-CH(CH_2)_3CH(CH_3)_2$; m.w. 128.16; col. liq.; b.p. 132-3; i.w.; i.al.

heptanedioic acid. See pimelic acid.

heptane dioic acid, 4-oxo-. See acetonediacetic acid.

1, 7-heptanediol (heptamethylene glycol). $CH_2OH(CH_2)_5CH_2OH$; m.w. 132.12; cr.; m.p. 12; b.p. 259; s.w.; s.al.

heptane, 1-ethoxy-. See ether, ethyl heptyl.

heptane, 4-ethyl- (ethyldipropylmethane). $CH_3(CH_2)_2CH(C_2H_5)-(CH_2)_2CH_3$; m.w. 128.16; col. liq.; b.p. 139; i.w.; i.al.

heptane, 1-heptyloxy-. See heptyl ether.

heptane, 1-iodo- (n-heptyl iodide). $CH_3-(CH_2)_6CH_2I$; m.w. 226.04; liq.; m.p. -48.2; b.p. 203.95; i.w.; s.al.

heptane, 1-methoxy-. See ether, heptyl methyl.

heptane, 2-methyl- (amyldimethylmethane; isooctane). $(CH_3)_2CH(CH_2)_4-CH_3$; m.w. 114.14; col. liq.; b.p. 116.0; i.w.; s.al.

heptane, 3-methyl- (butylethylmethylmethane). $CH_3CH_2CH(CH_3)(CH_2)_2-CH_3$; m.w. 114.14; liq.; b.p. 122.2; i.w.; s.al.

heptane, 4-methyl- (methyldipropylmethane). $CH_3(CH_2)_2CH(CH_3)-(CH_2)_2CH_3$; m.w. 114.14; col. liq.; b.p. 118.0; i.w.; s.al.

heptane, 1-phenoxy-. See ether, heptyl phenyl.

1-heptanethiol (n-heptyl mercaptan). $CH_3(CH_2)_6CH_2SH$; m.w. 132.18; liq.; m.p. -43.4; b.p. 176.2; i.w.; s.al.

heptanoic acid. See enanthic acid.

1-heptanol (n-heptyl alcohol). $CH_3-(CH_2)_5CH_2OH$; m.w. 116.12; col. liq.; m.p. -34.6; b.p. 176.3; s.al.

2-heptanol (amylmethylcarbinol). $CH_3-CHOH(CH_2)_4CH_3$; m.w. 116.12; liq.; b.p. 158-7; i.w.; s.al.

4-heptanol (dipropylcarbinol). $CH_3-(CH_2)_2CHOH(CH_2)_2CH_3$; m.w. 116.12; liq.; m.p. -41.5; b.p. 155.4; i.w.; s.al.

4-heptanol, 2, 6-dimethyl- (diisobutylcarbinol). $[(CH_3)_2CHCH_2]_2CHOH$; m.w. 114.16; col. liq.; b.p. 172-4 [760]; i.w.; s.al.

1-heptanol, esters of organic acids. See "heptyl ester" under the names of the acids.

4-heptanol, 4-ethyl- (ethyldipropylcarbinol). $CH_3CH_2COH(CH_2CH_2-CH_3)_2$; m.w. 144.16; liq.; b.p. 179.5; i.w.; s.al.

2-heptanol, 2-methyl- (amyldimethylcarbinol). $(CH_3)_2COH(CH_2)_4CH_3$; m.w. 130.14; col. liq.; b.p. 162; i.w.; s.al.

3-heptanol, 3-methyl- (butylethylmethylcarbinol). $CH_3CH_2COH-(CH_3)(CH_2)_3CH_3$; m.w. 130.14; col. liq.; b.p. 160.6; i.w.; s.al.

4-heptanol, 4-methyl- (methyldipropylcarbinol). $CH_3(CH_2)_2COH(CH_3)-(CH_2)_2CH_3$; m.w. 130.14; col. liq.; b.p. 161.5; i.w.; s.al.

1-heptanol, nitrite. See heptyl nitrite.

4-heptanol, 4-propyl- (tripropylcarbinol; tert-decylalcohol). $(C_3H_7)_3COH$; m.w. 158.17; col. oil.; b.p. 190-2; i.w.; s.al.

2-heptanone (amyl methyl ketone). $CH_3CO(CH_2)_4CH_3$; m.w. 114.11; col. liq.; b.p. 150; s.w.; s.al.

3-heptanone (ethyl butyl ketone). $C_2H_5-CO(CH_2)_3CH_3$; m.w. 114.11; col. liq. m.p. -39.0; b.p. 148.5; i.w.; s.al.

4-heptanone (dipropyl ketone; butyrone) $C_3H_7COC_3H_7$; m.w. 114.11; col. liq. m.p. -32.6; b.p. 144; s.al.

4-heptanone, 2, 6-dimethyl- (diisobutyl ketone; s-diisopropylacetone; iso valerone; valerone). $[(CH_3)_2CHCH_2]_2-CO$; m.w. 142.14; col. oil; b.p. 168 i.w.; s.al.

3-heptanone, 6-methyl- (ethyl isoamyl ketone). $C_2H_5COCH_2CH_2CH(CH_3)_2$; m.w. 128.12; liq.; b.p. 163.5; i.w.; s.al.

4-heptanone, 2-methyl- (isobutyl propyl ketone). $CH_3CH_2CH_2COCH_2-CH(CH_3)_2$; m.w. 128.12; liq.; b.p. 155; i.w.; s.al.

1-heptene (α-heptylene). $CH_2:CH-(CH_2)_4CH_3$; m.w. 98.11; col. liq. m.p. -10; b.p. 94.9; i.w.; s.al.

2-heptene (1-butyl-2-methylethylene; β-heptylene). $CH_3CH:CH(CH_2)_3CH_3$; m.w. 98.11; b.p. 98.1-8.4.

3-heptene (1-ethyl-2-propylethylene; γ-heptylene). $CH_3CH_2CH:CHCH_2-CH_2CH_3$; m.w. 98.11; b.p. 95.8-6.1.

5-hepten-2-one, 6-methyl-. $(CH_3)_2C:-CH(CH_2)_2COCH_3$; m.w. 126.11; col. liq.; m.p. -67.3; b.p. 174; i.w.; s.al.

2-heptene, 1-1, 7, 7-trimethylbicyclo-[2, 2, 1]-. See 1-bornylene.

heptine. See heptyne.

n-heptoic acid. See enanthic acid.

heptyl acetate. See acetic acid, heptyl ester.

pri-n-heptyl alcohol. See 1-heptanol.

n-heptyl aldehyde. See enanthaldehyde

heptylamine (n). $CH_3(CH_2)_6NH_2$; m.w. 115.14; col. liq.; m.p. -23; b.p. 155.1; s.w.; s.al.

heptylamine (n), α-methyl- (2-aminooctane; sec-n-octylamine; sec-n-capryl amine). $CH_3(CH_2)_5CH(CH_3)NH_2$; m.w. 129.16; liq.; b.p. 164-6; i.w.; s.al.

n-heptyl bromide. See heptane, 1-bromo-.

heptyl carbinol. See 1-octanol.

n-heptyl chloride. See heptane, 1-chloro-.

n-heptyl cyanide. See caprylonitrile.

heptylene. See heptene.

heptyl ether (1-heptyloxyheptane; di-n-heptyl ether). $(C_7H_{15})_2O$; m.w. 214.23; col. liq.; b.p. 260; i.w.; s.al.

n-heptylic acid. See enanthic acid.

heptylic alcohol. $CH_3(CH_2)_6OH$; m.w. 112.1; s.g. 0.83; colorl. liq.; m.p. -39.5; b.p. 175; s.w.; s.al.

n-heptylic aldehyde (oenanthol) $C_7H_{14}O$; m.w. 114.12; s.g. 0.850; b.p. 153; colorl. liq.

n-heptyl iodide. See heptane, 1-iodo-

n-heptyl mercaptan. See 1-heptanethiol

heptyl nitrite (n). $CH_3(CH_2)_6ONO$; m.w. 145.13; liq.; b.p. 155; i.w.

heptyl sulfate (di-n-heptyl sulfate) $[CH_3(CH_2)_6]_2SO_4$; m.w. 294.29; col. liq.; m.p. 11.4; b.p. 146.6 [1.5].

1-heptyne (1-heptine; n-amylacetylene; enanthylidene). $CH:C(CH_2)_4CH_3$; m.w. 96.09; col. liq.; m.p. >-70; b.p. 110.5; i.w.; s.al.

2-heptyne (butylmethylacetylene; 2-heptine). $CH_3C:C(CH_2)_3CH_3$; m.w. 96.09; col. liq.; b.p. 111-3; i.w.; s.al.

herapathite. See quinine, iodosulfate.

Hercolyn (Dihydromethyl abietate) $C_{19}H_{31}COOCH_3$; m.w. 318.27 amber liq. s.g. 1.03 b.p. 365-370.

Herculite. Synthetic tar-acid resin.

hercynite (iron spinel). A mineral $FeAl_2O_4$, cub., blk.; sp.gr. 2.91-3.9 hardness 7.5-8.0.

herderite. A mineral, $CaPO_4 \cdot BeFO$ monocl., yel., grnsh. wh.; sp.g 2.952-3.012; hardness 5.

hermannite. See manganese silicat

heroin. See morphine, diacetyl-.

Herolith. Synethetic tar-acid resin.

herpolhode. Path followed by point contact of energy ellipsoid of a rig body with the fixed tangent plane which it rolls.

herring oil. See oil, herring.

rschel effect. Lowering of developable density on a photographic plate caused by re-exposure to longer wave length radiation.

rtzian wave. Electro-magnetic wave of wave-lengths from 0.01 cm. to 30,000 m., waves used in radio broadcasting.

speretic acid. See isoferulic acid.

speretol (5-vinylguaiacol; 3-hydroxy-4-methoxystyrene). $CH_2{:}CHC_6H_3(OCH_3)OH$; m.w. 150.08; cr.; m.p. 57; s.w.; s.al.

speridene. See d-limonene.

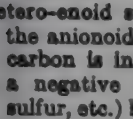
speridin. $C_{28}H_{34}O_{15}$; m.w. 482.20; yel. hyg. need.; m.p. 171.

ess' law of heat summation. If a chemical change can be made to take place in two or more different ways, then the amount of heat absorbed or evolved in the total change is the same no matter by which method the change is effected.

essite. See silver telluride.

essonite. See glossularite.

eterocyclic. In organic chemistry, having a closed chain or ring which contains more than one kind of atom; nitrogen, oxygen, or sulfur atoms usually being present in place of one or more carbon atoms, e.g. pyridine,



eterodyne. Coupling of oscillating circuits of such a relative frequency that the beats between them become audible.

etero-enoid system. Olefine in which the anionoid character of unsaturated carbon is intensified by linking it to a negative atom (oxygen, nitrogen, sulfur, etc.) by a single bond which can be converted into a double bond by a rearrangement of valency electrons.

eterogametic. Producing gametes of more than one kind.

eterogeneous. Lacking uniformity of composition in different portions of its mass; composed of different mixed and uncombined particles or portions, e.g. earth.

eterogeneous catalysis. See surface catalysis.

eterogeneous reaction. A reaction taking place on the surfaces between various phases in a heterogeneous system.

eteromorphic (polymorphic). Having two or more crystalline forms.

eteropolar. See polar.

eteropolar compound. See polar compound.

eteropolymerization. Special case of additive co-polymerization which involves the combination of an unsaturated substance and another unsaturated substance which by itself does not readily polymerize.

eteropycnosis. Property of contracting or condensing at a different rate from the majority of the chromosomes in the nucleus.

eteroside (glucoside). Substance which gives oses and other types of compounds on hydrolysis.

eterotrophic. Class of bacteria which cannot use inorganic nitrogen and carbon for growth.

eulandite. A mineral, $CaO \cdot Al_2O_3 \cdot 6SiO_2 \cdot 5H_2O$; monocl., wh., red, gray, brn; sp.gr. 2.16-2.249; hardness 3.5-4.0.

Heusler alloy. Non-ferrous magnetic alloy of copper, manganese and aluminum.

hewettite (metahewettite). $CaO_3 \cdot V_2O_5 \cdot 9H_2O$; m.w. 431.98; s.g. 2.55-2.51; mahogany-brownish red; earthy powder.

hexa-. Prefix signifying six.

hexabromide number. Measure of percentage of insoluble bromine compounds formed by treating oils with bromine.

hexachlorbenzene. See benzene, hexachloro-.

hexachlorethane. See ethane, hexachloro-

hexachlornaphthalene. See naphthalene, hexachloro-.

hexacosanoic acid. See cerotic acid.

1-hexacosanol. See ceryl alcohol.

n-hexacosyl alcohol. See ceryl alcohol.

hexadecanal, oxime. See palmitaldehyde, oxime.

hexadecanamide. See palmitamide.

hexadecane (n-hexadecane; cetane; biocetyl). $CH_3(CH_2)_{14}CH_3$; m.w. 226.27; col. leaf.; m.p. 20; b.p. 287.5; i.w.; s.al.

hexadecane, 1-hexadecyloxy-. See cetyl ether.

hexadecane, 1-iodo-. See cetyl iodide.

hexadecane, 1-phenoxy-. See ether, cetyl phenyl.

hexadecanenitrile. See palmitonitrile.

hexadecanoic acid. See palmitic acid.

1-hexadecanol. See cetyl alcohol.

hexadecanoyl chloride. See palmityl chloride.

7-hexadecenoic acid. See hypogeic acid (artificial).

2-hexadecine. See 2-hexadecyne.

n-hexadecyl. See cetyl.

n-hexadecyl acetate. See acetic acid, cetyl ester.

hexadecyl alcohol. See cetyl alcohol.

hexadecyl ethanoate. See acetic acid, cetyl ester.

n-hexadecylic acid. See palmitic acid.

2-hexadecyne (2-hexadecine; cetylene). $CH_3(CH_2)_{12}C{:}CCH_3$; m.w. 222.23; m.p. −25; b.p. 280-5.

7-hexadecynoic acid. See palmitolic acid.

1,5-hexadiene (biallyl; diallyl). $CH_2{:}CHCH_2CH_2CH{:}CH_2$; m.w. 82.08; liq.; m.p. −141; b.p. 59.6; i.w.

2, 4-hexadiene (bipropenyl; dipropylene). $CH_3CH{:}CHCH{:}CHCH_3$; m.w. 82.08; col. liq.; b.p. 82; i.w.

2, 4-hexadiene, 2, 5-dimethyl- (diisocrotyl). $(CH_3)_2C{:}CHCH{:}C(CH_3)_2$; m.w. 101.11; col. liq.; m.p. −91.3; b.p. 102.5 [760]; i.w.; s.al.

2, 4-hexadienedioic acid. See muconic acid.

2, 4-hexadienoic acid. See sorbic acid.

1, 5-hexadien-3-yne (divinylacetylene). $CH_2{:}CHC{:}CCH{:}CH_2$; m.w. 78.05; col. liq.; b.p. 83.5.

1, 5-hexadiyne (bipropargyl; 1, 5-hexadiine; dipropargyl). $CH{:}CCH_2CH_2C{:}CH$; m.w. 78.05.; col. liq.; b.p. 86; i.w.; s.al.

hexalin. See cyclohexanol.

Hexalin Acetate. See cyclohexanol acetate.

Hexalin, methyl. See o, m, p-cyclohexanol, methyl.

hexamethylene. See cyclohexane.

hexamethylenediamine. See 1, 6-hexanediamine.

hexamethyleneglycol. See 1, 6-hexanediol.

hexamethylenetetramine (methenamine; formamine; hexamine; urotropine). $(CH_2)_6N_4$; m.w. 140.13.; rhomb. f.al.; m.p. 263; s.al.

hexamine. See hexamethylenetetramine.

hexanal. See caproaldehyde.

hexanamide. See caproamide.

hexane (n-hexane). $CH_3(CH_2)_4CH_3$; m.w. 86.11; col. liq.; m.p. −94.3; b.p. 69.0; s.al.

hexane, 1-amino-. See hexylamine.

hexane, 2-amino-. See amylamine, α-methyl-.

hexane, 1-bromo (n-hexyl bromide). $CH_3(CH_2)_4CH_2Br$; m.w. 165.02; liq.; m.p. −85.0; b.p. 156.0; i.w.; s.al.

3-hexanecarboxylic acid. See valeric acid, α-ethyl-.

hexane, 1-chloro- (n-hexyl chloride). $CH_3(CH_2)_4CH_2Cl$; m.w. 120.56; col. liq.; m.p. −83; b.p. 132.4; i.w.

hexane, 2-chloro-. $CH_3CHCl(CH_2)_3CH_3$; m.w. 120.56; b.p. 123.

hexane chloro-2-ethyl-. $C_8H_{17}Cl$; m.w. 124.58; col.; sp.gr. 0.834 [20]; b.p. 181-200.

hexanedial. See adipaldehyde.

hexanediamide. See adipamide.

1, 6-hexanediamine (hexamethylenediamine). $NH_2(CH_2)_6NH_2$; m.w. 116.14; silk leaf.; m.p. 39-40; b.p. 196; s.w.; s.al.

hexane, dihydroxy-. See hexandiol.

hexane, 1, 6-diiodo- (1, 6-hexylene iodide). $ICH_2(CH_2)_4CH_2I$; m.w. 337.93; col. need. or liq.; m.p. 9.5; i.w.; s.al.

hexane, 2, 3-dimethyl- (isopropylmethylpropylmethane). $CH_3CH(CH_3)$-$CH(CH_3)CH_2CH_2CH_3$; m.w. 114.14; col. liq.; b.p. 113.9; i.w.; s.al.

hexane, 2, 4-dimethyl- (ethylisobutylmethylmethane). $(CH_3)_2CHCH_2CH$-$(CH_3)CH_2CH_3$; m.w. 114.14; col. liq.; b.p. 110.0; i.w.; s.al.

hexane, 2, 5-dimethyl- (biisobutyl). $(CH_3)_2CH(CH_2)_2CH(CH_3)_2$; m.w. 114.14; col. liq.; m.p. −91; b.p. 108.25; i.w.; s.al.

hexane, 3, 4-dimethyl- (bi-sec-butyl; sec-butylethylmethylmethane). CH_3-$CH_2CH(CH_3)CH(CH_3)CH_2CH_3$; m.w. 114.14; liq.; b.p. 116.5; i.w.; s.al.

hexanedioic acid. See adipic acid.

hexanedioic acid, 2, 3, 4, 5-tetrahydroxy-. See mucic acid; saccharic acid.

1, 6-hexanediol (hexamethylene glycol). $CH_2OH(CH_2)_4CH_2OH$; m.w. 118.11; need. f.w.; m.p. 42; b.p. 250; s.w.; s.al.

2, 3-hexanediol (2, 3-dihydroxyhexane). $CH_3(CH_2)_3(CHOH)_2CH_3$; m.w. 118.11; b.p. 207; s.w.; s.al.

3, 4-hexanediol, 3, 4-diethyl- (tetraethylethylene glycol). $(C_2H_5)_2COH$-$COHC(C_2H_5)_2$; m.w. 186.17; m.p. 27-8; b.p. 230; i.w.; s.al.

2, 3-hexanedione, 3-oxime (α-isonitrosobutyl methyl ketone). CH_3CO-$C(:NOH)(CH_2)_2CH_3$; m.w. 129.09; leaf.; m.p. 49.5.

2, 5-hexanedione (acetonylacetone; sym-diacetylethane). $CH_3CO(CH_2)_2$-$COCH_3$; m.w. 114.08; col. liq.; m.p. −9; b.p. 192-4; s.w.; s.al.

hexanedioyl chloride. See adipyl chloride.

hexane, 1-ethoxy. See ether, ethyl hexyl.

hexane, 3-ethyl- (diethylpropylmethane). $(CH_3CH_2)_2CHCH_2CH_3$; m.w. 114.14; col. liq.; b.p. 118.9; i.w.; s.al.

1, 2, 3, 4, 5, 6-hexanehexol. See dulcitol; sorbitol.

hexane, 1-iodo- (n-hexyl iodide). CH_3-$(CH_2)_4CH_2I$; m.w. 212.02; col. liq.; b.p. 180.

hexane, 2-methyl- (ethylisobutylmethane). $(CH_3)_2CH(CH_2)_2CH_2CH_3$; m.w. 100.12; col. liq.; m.p. −119.1; b.p. 90.0; i.w.; s.al.

hexane, 3-methyl- (ethylmethylpropylmethane). $CH_3CH_2CH(CH_3)CH_2$-CH_2CH_3; m.w. 100.12; col. liq.; m.p. −119.4; b.p. 89.4; i.w.; s.al.

hexane, 3-methylene-. See 1-pentene, 2-ethyl-.

hexanenitrile. See capronitrile.

1, 2, 3, 4, 5-hexanepentol. See rhamnitol.

hexane, 1-phenoxy-. See ether, hexyl phenyl.

1-hexanethiol (pri-n-hexyl mercaptan). $CH_3(CH_2)_5SH$; m.w. 118.17; col. liq.; m.p. −81.03; b.p. 149-50 [760]; i.w.; s.al.

hexanoic acid. See caproic acid.

hexanoic anhydride. See caproic anhydride.

1-hexanol (n-hexyl alcohol; amylcarbinol). $CH_3(CH_2)_4CH_2OH$; m.w. 102.11; col. liq.; m.p. −51.6; b.p. 156.4; s.al.

2-hexanol (butylmethylcarbinol). CH_3-$CHOH(CH_2)_3CH_3$; m.w. 102.11; col. liq.; b.p. 140-0.4; s.w.; s.al.

3-hexanol (ethylpropylcarbinol). CH_3-$CH_2CHOH(CH_2)_2CH_3$; m.w. 102.11; col. liq.; b.p. 135; s.w.; s.al.

hexanol chloride. See caproyl chloride.

1-hexanol, esters of organic acids. See "hexyl ester" under the names of the acids.

1-hexanol, 2-ethyl-. $C_4H_9CH(C_2H_5)$-CH_2OH; m.w. 130.14; col. liq.; m.p. < −76; b.p. 184.6; s.al.

3-hexanol, 3-ethyl- (diethylpropylcarbinol). $CH_3CH_2COH(C_2H_5)(CH_2)_2$-$CH_3$; m.w. 130.14; col. liq.; b.p. 160.5; i.w.; s.al.

1-hexanol, 2-ethyl-, acetate (β-ethylhexyl acetate). $C_4H_9CH(C_2H_5)CH_2$-$OOCCH_3$; m.w. 172.16; col. liq.; m.p. −93; b.p. 199.3.

3-hexanol, 3-ethyl-5-methyl- (diethylisobutylcarbinol). $(C_2H_5)_2COHCH_2$-$CH(CH_3)_2$; m.w. 144.16; liq.; b.p. 172; i.w.; s.al.

1-hexanol, 3-isopropyl-5-methyl- (isocapric alcohol; β-isoamylisoamyl alcohol; diamyl alcohol). $(CH_3)_2CHCH(CH_2$-$OH)(CH_2)_2CH(CH_3)_2$; m.w. 158.17; col. oil.; b.p. 211; i.w.; s.al.

1-hexanol, 2-methyl-. $CH_3(CH_2)_2$-$CH(CH_3)CH_2OH$; m.w. 116.13; liq.; b.p. 162-4 [760]; i.w.; s.al.

2-hexanol, 2-methyl- (butyldimethylcarbinol). $CH_3COH(CH_3)(CH_2)_3CH_3$; m.w. 116.12; b.p. 58-60 [20].

1-hexanol, 5-methyl- (isoheptyl alcohol; isohexylcarbinol). $(CH_3)_2CH(CH_2)_2$-CH_2OH; m.w. 116.12; liq.; b.p. 167-9; s.w.; s.al.

2-hexanol, 5-methyl- (isoamyl methyl carbinol). $CH_3CHOH(CH_2)_2$-$CH(CH_3)_2$; m.w. 116.12; liq.; b.p. 148-50; i.w.; s.al.

3-hexanol, 3-methyl- (ethylmethylpropylcarbinol). $CH_3(CH_2)_2$-$COH(CH_3)CH_2CH_3$; m.w. 116.12; col. liq.; b.p. 141; i.w.; s.al.

3-hexanol, 5-methyl- (ethylisobutylcarbinol). $CH_3CH_2CHOHCH_2$-$CH(CH_3)_2$; m.w. 116.12; liq.; b.p. 148.2; i.w.; s.al.

1-hexanol, nitrite. See hexyl nitrite.

3-hexanol, 2, 2, 5, 5-tetramethyl-. $(CH_3)_3CCH_2CHOHC(CH_3)_3$; m.w. 158.17; cr.; m.p. 52-3; b.p. 173-4; i.w.; s.al.

2-hexanone (butyl methyl ketone). CH_3-$CO(CH_2)_3CH_3$; m.w. 100.09; col. liq.; m.p. −56.9; b.p. 127.2; s.w.; s.al.

3-hexanone (ethyl propyl ketone). C_2H_5-$CO(CH_2)_2CH_3$; m.w. 100.09; col. liq.; b.p. 124; s.w.; s.al.

2-hexanone, 5-methyl- (isoamyl methyl ketone). $CH_3COCH_2CH_2CH(CH_3)_2$; m.w. 114.11; col. liq.; b.p. 144; s.w.; s.al.

3-hexanone, 5-methyl- (ethyl isobutyl ketone). $C_2H_5COCH_2CH(CH_3)_2$; m.w. 114.11; col. liq.; b.p. 136; i.w.; s.al.

2-hexanone, 5-methyl-, oxime. CH_3-$C(:NOH)C_5H_{11}$; m.w. 129.13; col.-yel. oil.

2-hexanone, 1, 3, 4, 5, 6-pentahydroxy-. See sorbose.

2-hexenal, 2-ethyl- (α-ethyl-β-propylacrolein). $CH_3(CH_2)_3CH{:}C(C_2H_5)$-$CHO$; m.w. 126.11; col. liq.; b.p. 175; i.w.; s.al.

1-hexene (butylethylene). $CH_2{:}CH$-$(CH_2)_3CH_3$; m.w. 84.09; col. liq.; m.p. −98.5; b.p. 64.1; i.w.; s.al.

2-hexene (β-hexylene; 1-methyl-2-propylethylene). $CH_3CH{:}CH(CH_2)_2$-CH_3; m.w. 84.09; b.p. 67.9-8.1.

3-hexene (sym-diethylethylene; γ-hexylene). $CH_3CH_2CH{:}CHCH_2CH_3$; m.w. 84.09; b.p. 67.5; b.p. 70-1.

3-hexene, 2, 5-dimethyl- (sym-diisopropylethylene). $(CH_3)_2CHCH{:}CH$-$CH(CH_3)_2$; m.w. 112.12; b.p. 116-20.

1-hexene, 2-methyl- (1-butyl-1-methylethylene). $CH_2{:}C(CH_3)CH_2CH_2CH_2$-$CH_3$; m.w. 98.11; b.p. 91.1-1.5.

1-hexene, 3-methyl-. $CH_2{:}CH$-$CH(CH_3)CH_2CH_2CH_3$; m.w. 98.11; b.p. 84.0.

1-hexene, 4-methyl-. $CH_2{:}CHCH_2$-$CH(CH_3)CH_2CH_3$; m.w. 98.11; b.p. 87.2-7.5.

1-hexene, 5-methyl- (isoamylethylene). $CH_2{:}CHCH_2CH_2CH(CH_3)_2$; m.w. 98.11; b.p. 84.7.

2-hexene, 2-methyl- (1, 1-dimethyl-2-propylethylene). $(CH_3)_2C{:}CHCH_2$-CH_2CH_3; m.w. 98.11; b.p. 94.4-4.6.

2-hexene, 3-methyl- (1, 2-dimethyl-1-propylethylene). $CH_3CH{:}C(CH_3)$-$CH_2CH_2CH_3$; m.w. 98.11; b.p. 93.1-3.3.

2-hexene, 4-methyl- (1-sec-butyl-2-

methylethylene). $CH_3CH:CH-CH(CH_3)CH_2CH_3$; m.w. 98.11; b.p. 87.1-7.6; b.p. 85.1-5.6.

2-hexene, 5-methyl- (1-isobutyl-2-methylethylene). $CH_3CH:CH-CH_2CH(CH_3)_2$; m.w. 98.11; b.p. 91.1-1.6; b.p. 85.6-6.1.

3-hexene, 2-methyl- (1-ethyl-2-isopropylethylene). $(CH_3)_2CHCH:CH-CH_2CH_3$; m.w. 98.11; b.p. 86.4-6.9.

2-hexenoic acid (β-propylacrylic acid). $CH_3CH_2CH_2CH:CHCOOH$; m.w. 114.08; need. f.w.; m.p. 32; b.p. 217; s.w.; s.al.

2-hexenoic acid, 5-methyl- (α, β-isoheptenic acid). $(CH_3)_2CHCH_2CH:CHCOOH$; m.w. 128.09; m.p. 16.5; b.p. 227; s.al.

5-hexen-3-ol, 3-ethyl- (allyldiethylcarbinol). $CH_2:CHCH_2COH(C_2H_5)CH_2CH_3$; m.w. 128.12; b.p. 156.

5-hexen-2-one (allylacetone). $CH_2:CHCH_2CH_2COCH_3$; m.w. 98.08; col. liq.; b.p. 129.5; i.w.; s.al.

hexine. See hexyne.

n-hexoic acid. See caproic acid.

n-hexoic aldehyde. See caproaldehyde.

Hexone. See 2-pentanone, 4-methyl-.

hexosan (hemicellulose). Condensation products of hexose sugars, $(C_6H_{10}O_5)_n$, intermediate between simple sugars and the celluloses. See hemicellulose.

hexose. A sugar containing six carbon atoms.

hexoylene. See 2-hexyne.

hexyl alcohol, active. See 1-pentanol, 3-methyl-.

n-hexyl alcohol. See 1-hexanol.

hexylamine (n). $CH_3(CH_2)_4CH_2NH_2$; m.w. 101.13; col. liq.; m.p. −19; b.p. 128-30; s.w.; s.al.

n-hexyl bromide. See hexane, 1-bromo-.

n-hexyl chloride. See hexane, 1-chloro-.

hexylene. See hexene.

1, 6-hexylene iodide. See hexane, 1, 6-diiodo-.

n-hexyl iodide. See hexane, 1-iodo-.

pri-n-hexyl mercaptan. See 1-hexanethiol.

hexyl nitrite (n). $CH_3(CH_2)_5ONO$; m.w. 131.11; yel. liq.; b.p. 120-30; i.w.; s.al.

hexyl-resorcinol. See resorcinol, 4-hexyl-.

hexyl sulfate (di-n-hexyl sulfate). $[CH_3(CH_2)_5]_2SO_4$; m.w. 266.26; b.p. 125.3°.

1-hexyne (butylacetylene; 1-hexine). $HC:C(CH_2)_3CH_3$; m.w. 82.08; col. liq.; m.p. −150; b.p. 71.5; i.w.; s.al.

2-hexyne (2-hexine; methylpropylacetylene; hexoylene). $CH_3C:C(CH_2)_2CH_3$; m.w. 82.08; liq.; b.p. 84; i.w.; s.al.

hiddenite. See spodumene.

hide gelatin. Gelatin made from trimmings of skins and hides.

hide powder. Collagen modified by liming.

hiding power. Measure of opacity or covering power of a pigment. Ability to cover up another pigment or color.

hiding power, relative. Ability of a coating, upon application and drying, to reduce the contrast of a black and white surface.

high flash. Having a flash point of 100° F or higher.

High Flash Naphtha. See naphtha, high flash.

high frequency. In electricity, having many thousands of alternations per second.

high solvency. Petroleum solvents having a kauri-butanol number of 40 or higher.

high-vacuum tube. Electronic device which contains two or more electrodes and whose operation depends upon the flow of electrons through an evacuated space.

higher bacteria. Forms of life midway between the bacteria and higher forms such as algae, protozoa, etc., e.g. some of the spirochaetes.

higher fatty acid. Organic acid, containing a carboxyl group, usually of normal chain structure and containing an even number of carbon atoms, e.g. palmitic acid, $C_{16}H_{32}O_2$.

Hilt's law. The C/H ratio of coal increases and the volatile content decreases, with increase in depth, in a given vertical seam section.

Hinsberg reaction. Method for separating mixtures of primary, secondary and tertiary amines by treatment with benzenesulfonyl chloride.

hippuric acid (n-benzoylglycine; benzamidoacetic acid). $C_6H_5CONHCH_2COOH$; m.w. 179.08; col. rhomb.; m.p. 187.5; s.al.

hippuric acid, p-phenylphenacyl ester. $C_6H_5CONHCH_2COOCH_2COC_6H_4-C_6H_5$; m.w. 373.16; m.p. 163.

d-histidine. $C_3H_3N_2CH_2CH(NH_2)-COOH$; m.w. 155.09; lng. pl.; m.p. 287-8; i.al.

dl-histidine (dl-α-amino-5-imidazolepropionic acid). $C_3H_3N_2CH_2-CH(NH_2)COOH$; m.w. 155.09; tetr. pr.; s.w.; i.al.

l-histidine. $C_3H_3N_2CH_2CH(NH_2)-COOH$; m.w. 155.09; leaf. f.w.; s.w.; s.al.

l-histidine, diflavianate. $C_6H_9-N_3O_2(C_{10}H_6N_2O_8S)_2$; m.w. 783.34; need.; s.w.; i.al.

l-histidine, dihydrochloride. $C_6H_9-N_3O_2\cdot 2HCl$; m.w. 228.02; rhomb. pl.; s.al.

histone. A relatively simple protein, similar to protamine but less rich in nitrogen and basic amino acids.

histozyme (aminocylase). An enzyme, belonging to the desamidases, which acts upon hippuric acid and its homologues.

Hittorf number. See transference number.

hoarhound. See horehound.

hodograph. Locus of terminal point of a vector which, drawn from a fixed origin, continuously shows the velocity of a point moving along any given path.

hodoscope. Device for tracing cosmic ray paths.

Hofman reaction. Reaction of an amide first with an alkaline hypochlorite, then with concentrated sodium hydroxide, whereby CO is split off. A general reaction for preparing a primary amine from the next higher amide.

hog's bean. See henbane.

Holite. Synthetic tar-acid resin for molding and laminating.

hollander. Washing tank containing beaters used in paper pulp manufacture.

holmium. Ho; at. wt. 163.5; a member of the erbium family of rare earths, which includes thulium, erbium, holmium and dysprosium; forming highly colored salts. The free element has never been isolated.

holocellulose. Carbohydrate fraction in wood freed of extraneous materials.

holohedral. Crystal having full number of faces corresponding to the development of the complete maximum symmetry possible to a given crystal system.

holomorphic. Crystal whose two ends are symmetrical with each other.

holonomic (holonomous). Dynamic systems having equal number of degrees of freedom and independent coordinates.

holophytic. Capable of synthesizing starch by the process of photosynthesis, a function of the higher plant forms.

holoside. Substance which gives only oses on hydrolysis.

homatropine (mandelyltropeine; homo atropine). $C_{16}H_{21}NO_3$; m.w. 275.17; deliq. pr.f.et.; glist. pr.f.al.; m.p 95.5-8.5; s.w.; s.al.

homatropine, hydrobromide. $C_{16}H_{21}-NO_3\cdot HBr$; m.w. 356.10; col. rhomb. pr.; s.w.

homatropine, hydrochloride. $C_{16}H_{21}-NO_3\cdot HCl$; m.w. 311.64; sm. wh. cr.; m.p. 216-7; s.w.; s.al.

homeomery. Classification of compounds on basis of similar thermal and elastic coefficients.

homoanthranilonitrile. See p-tolunitrile 2-amino-.

homoatropine. See homatropine.

homocentric (stigmatic). In optics, said of light rays going thru a common point or traversing lines which, if extended, would pass thru a common point.

homochromatic. Different parts of the same or uniform coloring.

homocinchonidine. $C_{19}H_{22}N_2O$; m.w. 294.19; pr.; m.p. 207.6; i.w.

homocyclic compound. Aromatic and alicyclic hydrocarbon and its derivatives containing closed chains of carbon atoms only. Compare heterocyclic.

homocyclic. In organic chemistry, having only one type of atom composing the ring, e.g. benzene, whose ring is composed of carbon atoms only. Compare heterocyclic.

homogametic. Producing gametes all alike as regards their chromosomes.

homogeneous. Uniform in composition and structure thruout its mass, as a solution or a crystal.

homogeneous reaction. A reaction which takes place between substances dissolved in each other or in a solvent.

homogenization. The decrease of globule size in an emulsion by mechanical means.

homogenizer. A machine for decreasing particle size in an emulsion, by forcing the latter through a small opening under high pressure.

homohydroquinone. See toluhydroquinone.

homoiotonic. A substance which does not change the surface tension of water.

homologous field. Field of force whose lines of force in a given plane pass thru one point (center of homology).

homologous series. A series of related organic compounds of increasing molecular weight, the difference between successive compounds being CH_2, e.g. the series HCOOH, CH_3-COOH, $CH_3\cdot CH_2\cdot COOH$, etc., or the series C_6H_6, $C_6H_5CH_3$, $C_6H_5-CH_2\cdot CH_3$, etc.

homologues. Members of homologous series (q.v.).

homology, center of. See homologous field.

homophthalic acid (α, 2-toluenedicarboxylic acid). $C_6H_4(CH_2COOH)-COOH$; m.w. 180.06; cr.f.w.; m.p. 175; s.w.; s.al.

homopolar (homoepolar). Term applied to compounds in which linkages are due to shared electrons rather than electrostatic forces, or to substances having a zero or very small dipole moment. These substances conduct no electricity, have comparatively low melting and boiling points, and are capable of optical isomerism.

homopolar bond. Valency bond.

homopolymerization. Form of polymerisation in which the polymer is built up by the additive combination of the original compound or monomer. Compare heteropolymerization.

4-homopyrocatechol (4-methylpyrocatechol). $CH_3C_6H_3(OH)_2$; m.w. 124.06; col.; m.p. 65; b.p. 252; s.w.; s.al.

m-homosalicylic acid (α). See 2, 4-cresotic acid.

m-homosalicylic acid (β). See 2, 6-cresotic acid.

o-homosalicylic acid. See 2, 3-cresotic acid.

p-homosalicylic acid. See 2, 5-cresotic acid

homotropic. Of a similar crystal form.

honey. The nectar of flowers, gathered and stored by honey-bees, containing a large percentage of glucose and levulose; used in food, candy and medicine.

hoof meal. A dried ground mix of hoof and horn; containing ab 15% ammonia, used as a fertilize

hoof oil. See oil, neatsfoot.

Hooke's law. Within the elastic l of any body the ratio of the stres the strain produced is constant.

hopcalite. A mixture of metallic oxi largely manganese dioxide and cu oxide, with the addition of co and silver oxides, which catalyzes oxidation of carbon monoxide ordinary temperatures, used in masks and ventilating systems.

hopeite. A mineral, $3ZnO\cdot P_2O_5\cdot 4H$ rhomb., grayish wh.; sp.gr. 3. hardness 2.5-3.0.

hops (humulus). Fruit of the pl Humulus lupulus, containing lupu alkaloids, valerianic acid, etc., u in medicine and brewing.

hordenine (p-hydroxy-n, n-dimeth phenethylamine). $C_{10}H_{15}NO$; m 165.13; rhomb. pr.: b.p. 140 50; s. s.al.

hordenine, sulfate. $(C_{10}H_{15}NO)_2\cdot H_2SO_4\cdot H_2O$; m.w. 446.34; col. m.p. 208-10; s.w.; s.al.

horehound (marrubium, hoarhoun Preparation from the dried leaves Marrubium vulgare, used in medic and confectionery.

hormone. An organic substance form in the ductless glands, such as thyroid, pituitary and adrenal glan and the testes and ovaries, and secre in small quantities directly into blood with strong physiological eff acting usually as a messenger in blood stream for the stimulation a specific function.

horn mercury. See calomel.

horn silver. See cerargyrite.

horn angle. Figure formed by curves having a common tangent a common point.

hornblende (amphibole). A mine $Ca(Mg,Fe)_3(SiO_3)_4$, $Al_2(Mg,F-(AlO_3)_2(SiO_3)_3$, $Fe(Mg,Fe)_3FeC(SiO_3)_3$; monocl., dk. grn. to b sp. gr. 3.0-3.5; hardness 5-6.

Hornolith. Synthetic tar-acid resi

hornstone. A cryptocrystalline var of quartz closely related to flint.

horopter. Locus of points in a binoc vision field which are seen as one po

horse power (H.p.; h.p.). Measur power equal to 0.70696 British ther unit (mean) per second; 0.7 kilowatt (g = 980); 0.74570 (980.665) kilowatt; 1.0139 horse po (metric) or cheval-vapeur; 10 kilogram-calories (mean) per min 42.418 British thermal units (m per minute; 550 foot-pounds second; 745.2 watts (g = 980); 74 watts (g = 980.665); 3.3000 × foot-pounds per minute.

horse power hour (H.P.hr.; h.p. Measure of work and energy = 0. kilowatt-hour; 641.30 kilog calories (mean); 745.7 watt ho 2545.0 British thermal units (me 2.7374×10^5 kilogram-meters; 1. $\times 10^6$ foot-pounds; 2.6845 × joules (absolute).

horsepower, indicated. Mecha power produced in an engine cyli by steam acting against the pisto

host. Designation for the organism which another organism is para-

hot short. Brittleness in iron or alloys caused by presence of su

Hübl number. See iodine number.

hübnerite. A mineral, MnO·W monocl., brnsh. red, yel. to sp.gr. 7.2-7.5; hardness 4.5-5.5.

Hudson's rules. The difference specific rotation of the α and β f of aldoses is a constant; if the a substitution or a condensation the carbon atom, then the deriva have a total rotary power equal to sum of the rotations of the α and β f

hue. The predominent wave le of light reflected by a colored mat being an attribute of a mass shade or tint.

ring. See powder pattern.
ectant. Substance which absorbs oisture.
ic acid. An acid contained in umus, probably aiding in attack and composition of soil particles, thus erating food for plant use.
id heat. Number of British thermal nits necessary to raise temperature 1 lb. dry air, plus whatever moisture may carry, 1° F.
id volume. Total volume in cubic et of 1 pound of humid air.
idity. Pounds of water vapor rried by one pound of dry air under ny particular conditions.
idity, absolute. A measure of ater vapor present in the atmosphere, xpressed in grams per cubic meter. Compare relative humidity.
idity, percentage. See percentage umidity.
idity, relative. See relative umidity.
noral. Concerned with the natural ody fluids.
nulus. See hops.
mus. Indefinite organic mixture of acterial, plant, and animal debris.
chinsonite. A mineral, (Tl,Ag,-Cu)$_2$S·As$_2$S$_3$+PbS·As$_2$S$_3$(?); rhomb., cdrlet to red; sp.gr. 4.6; hardness 1.5-2.0.
ygens principle. Each point on an advancing wave front may itself be considered a source of wave motion.
acinth. See zircon.
brid test. A test made by a method intermediate between a scientific and practical test.
dantoic acid (n-carbamylglycine; ureidoacetic acid; glycoluric acid; ureaacetic acid). $NH_2CONHCH_2$-COOH; m.w. 118.06; monocl. pr.; m.p. 171.
dantoin (glycolylurea). NHCONH-COCH$_2$; m.w. 100.05; need.; m.p. 220; s.w.; s.al.
dantoin, 1-methyl- (β-methylhydantoin). N(CH$_3$)CONHCOCH$_2$; m.w. 114.06; pr.; m.p. 157-8; s.w.; s.al.
dantoin, 5-methyl- (α-lactylurea). NHCONHCOCH(CH$_3$); m.w. 114.06; rhomb.; m.p. anh. 145; s.w.; s.al.
dantoin, 2-thio- (glycolylthiourea). $C_3H_4N_2OS$; m.w. 116.11; need. f.h.w.; s.w.; i.al.
dantoin, 5-ureido-. See allantoin.
dnocarpus oil. See oil, hydnocarpus.
dracetin. See hydrazine, 1-acetyl-2-phenyl-.
dracrylic acid (3-hydroxypropanoic acid; β-hydroxypropionic acid; ethylene lactic acid). CH_2OHCH_2COOH; m.w. 90.05; syrup; s.w.; s.al.
dracrylic acid, α-phenyl-. See tropic acid.
dracrylonitrile (3-hydroxypropanenitrile; ethylene cyanohydrin; glycol cyanohydrin; β-hydroxypropionitrile). $HOCH_2CH_2CN$; m.w. 71.05; col. liq.; b.p. 221; s.w.; s.al.
drargillite. See gibbsite.
drastine. $C_{21}H_{21}NO_6$; m.w. 383.17; col. rhomb. pr.; m.p. 132.
drastine, hydrochloride. $C_{21}H_{21}NO_6$·HCl; m.w. 419.64; wh. hyg. powd.; m.p. 210; s.w.; s.al.
drastinine. $C_{11}H_{13}NO_3$; m.w. 207.11; wh.-ylsh. need. f. lgr.; m.p. 116-7; s.w.; s.al.
drastinine, bisulfate. $C_{11}H_{11}NO_3$·H_2SO_4; m.w. 287.17; grn. fluores. cr.; s.w.; s.al.
drastinine, hydrochloride (i). $C_{11}H_{11}NO_2$·HCl; m.w. 225.56; yel. need.; aq. sol. bl. fluoresc.; s.w.; s.al.
drastis (golden seal, orange root, yellow root, yellow puccoon, turmeric root, Indian turmeric). Dried rhizomes and roots of hydrastis canadensis, containing the alkaloids, berberine, canadine and hydrastine; used in medicine.
drate. A substance which crystallizes from an aqueous solution with a definite amount of water, e.g. $CuSO_4$·$5H_2O$.
drated cellulose. Cellulose physically altered by the action of cold concentrated acids or alkalies, e.g. artificial parchment paper.
dratropic acid (α-methyl-α-toluic acid; α-phenylpropionic acid). $C_6H_5CH(CH_3)COOH$; m.w. 150.08; col. liq.; m.p. <-20; b.p. 265; s.w.
dratropic acid, α-hydroxy-. See atrolactic acid.
dratropic acid, dl-α-hydroxy-. See dl-atrolactic acid.
draulic gradient. Rate of fall of pressure head along a conduit filled with flowing liquid.
draulic lime. Quicklime, or calcium oxide, with a considerable percentage of clay, owing its strength to the combination, during calcination, of the clay with the lime and the consequent formation of calcium aluminum silicates which are hydrated upon the addition of water.
draulics. Hydrodynamics; the science of fluids in motion.
drazide. Compound in which the amino group of carbonamides is replaced by the hydrazino group.
drazine. NH_2·NH_2; m.w. 32.05; col. liq. or wh. cr.; s.g. liq. 1.011 ^{15}; m.p. 1.4; b.p. 113.5; s.w.; s.al.
drazine, 1-acetyl-2-phenyl- (acetic acid β-phenylhydrazide; hydracetin; pyrodin). $CH_3CONHNHC_6H_5$; m.w. 150.09; col. hex.; m.p. 128; s.w.; s.al.
drazine azoimide. N_2H_4·HN_3; m.w. 75.08; deliq.; m.p. 75.4; s.w.; s.al.
drazine, benzal-. See benzaldehyde, hydrazone.
drazine, benzalphenyl-. See benzaldehyde, phenylhydrazone.
drazine, benzoyl-. See benzoic acid, hydrazide.
drazine, 1-benzoyl-2-phenyl-. See benzoic acid, phenylhydrazide.
drazine, benzyl-. $C_6H_5CH_2NHNH_2$; m.w. 122.09; col. oil.; m.p. 26; b.p. 103 ^{41}; s.w.; s.al.
drazine, benzylidene-. See benzaldehyde, hydrazone.
drazine, benzylidenephenyl-. See benzaldehyde, phenylhydrazone.
drazine, p-bromophenyl-. $BrC_6H_4NHNH_2$; m.w. 186.99; need. or leaf. f. al. or lgr.; m.p. 106; i.w.; s.al.
drazine, 1-butylidene-2-phenyl-. See butyraldehyde, phenylhydrazone.
drazine, carbamyl-. See semicarbazide.
drazine, dibenzal-. See benzaldehyde, azine.
drazine dichloride. N_2H_4·2HCl; m.w. 104.98; cub. col.; s.g. 1.42; m.p. 198; s.w.; s.al.
drazine, dihydrochloride. See hydrazine dichloride.
drazine, diisopropylidene. See acetone, azine.
drazine (dimethylphenyl)-. See hydrazine, xylyl-.
drazine, 1, 2-di-1-naphthyl- (1, 1'-hydrazonaphthalene). $C_{10}H_7NHNHC_{10}H_7$; m.w. 284.14; col. leaf. f.bz.; m.p. 271; i.w.; s.al.
drazine, 1, 2-di-2-naphthyl- (2, 2'-hydrazonaphthalene). $C_{10}H_7NHNHC_{10}H_7$; m.w. 284.14; col. flocks; m.p. 164; i.w. s.al.
drazine dinitrate. N_2H_4·2HNO$_3$; m.w. 158.08; col. cr.; s.w.
drazine, 2, 4-dinitrophenyl-. $(NO_2)_2C_6H_3NHNH_2$; m.w. 198.08; purp.-red pr.f.al.; vlt. fluores.; m.p. 194; i.w.; s.al.
drazine diorthophosphite. N_2H_4·$(H_3PO_3)_2$; m.w. 196.13; m.p. 82.
drazine, 1, 1-diphenyl- (uns-diphenylhydrazine). $(C_6H_5)_2NNH_2$; m.w. 184.11; ylsh.-br. liq. or pl. f. lgr.; m.p. 34.5; b.p. 220 ^{50}; s.w.; s.al.
drazine, 1, 2-diphenyl- (hydrazobenzene; sym-diphenylhydrazine). $C_6H_5NHNHC_6H_5$; m.w. 184.11; col.-ylsh. rhomb. tab. f.al.; m.p. 131; s.w.
drazine, 1, 2-di-m-tolyl- (m-hydrazotoluene). $CH_3C_6H_4NHNHC_6H_4CH_3$; m.w. 212.14; col. oil.; i.w.; s.al.
drazine, 1, 2-di-o-tolyl- (o-hydrazotoluene). $CH_3C_6H_4NHNHC_6H_4CH_3$; m.w. 212.14; col. leaf. f.al.; m.p. 165; s.w.; s.al.
drazine, 1, 2-di-p-tolyl- (p-hydrazotoluene). $CH_3C_6H_4NHNHC_6H_4CH_3$; m.w. 212.14; col. monocl. pl.f.al.-et.; m.p. 133-4; i.w.; s.al.
drazine, ethyl-. $NH_2NHC_2H_5$; m.w. 60.08; col. liq.; b.p. 101.5; s.w.; s.al.
drazine, 1-ethylidene-2-phenyl-. See acetaldehyde, phenylhydrazone.
drazine, 1-ethyl-1-phenyl-. $C_6H_5(C_2H_5)NNH_2$; m.w. 136.11; liq.; b.p. 237.
drazine, 1-ethyl-2-phenyl-. $C_6H_5NHNHC_2H_5$; m.w. 136.11; liq.; b.p. 240; s.w.; s.al.
drazine formate. N_2H_4·2HCOOH m.w. 124.08; cub.; m.p. 128; s.w.
drazine, formyl-. See formohydrazide.
drazine fluosilicate. $N_2H_4H_2SiF_6$; m.w. 176.12; cryst.; s.w.; s.al.
drazine, guanyl-. See guanidine, 1-amino-.
drazine hydrate. N_2H_4·H_2O; m.w. 50.06; col. fum. liq. or cub. cr.; s.g. 1.03 ^{21}; m.p. <-40; b.p. 118.5740; s.w.; s.al.
drazine hypophosphate. (N_2H_4)-$H_4P_2O_6$; m.w. 194.12; m.p. 152.
drazine, 1-isoamyl-1-phenyl-. $C_6H_5N(C_5H_{11})NH_2$; m.w. 178.16; liq.; b.p. 173-5 ^{50}.
drazine, 1-isobutyl-1-phenyl- (1-[β-methylpropyl]-1-phenylhydrazine). $C_4H_9(C_6H_5)NNH_2$; m.w. 164.14; b.p. 245.
drazine, methyl-. CH_3NHNH_2; m.w. 46.06; col. hyg. liq.; b.p. 87.5; s.w.; s.al.
drazine, 1-methyl-1-phenyl-. $C_6H_5N(CH_3)NH_2$; m.w. 122.09; yel. liq.; b.p. 227.5; s.w.; s.al.
drazine, 1-methyl-2-m-tolyl- (m-methylhydrazobenzene). $CH_3C_6H_4NHNHC_6H_5$; m.w. 198.13; col.-lt. yel. pr. f. lgr.; m.p. 59-61; i.w.; s.al.
drazine, 1-methyl-2-p-tolyl- (p-methylhydrazobenzene). $CH_3C_6H_4NHNHC_6H_5$; m.w. 198.13; col. sc. f. lgr.; m.p. 86-7; s.al.
drazine monochloride. N_2H_4·HCl; m.w. 68.51; wh. need.; m.p. 89; s.w.; s.al.
drazine mononitrate. N_2H_4·HNO$_3$; m.w. 95.06; col. dimorph. need.; m.p. 70.7; s.w.; s.al.
drazine monoorthophosphite. N_2H_4·H_3PO_3; m.w. 114.09; m.p. 36.
drazine, (1-naphthyl)-. $C_{10}H_7NHNH_2$; m.w. 158.09; col. leaf.; m.p. 116; b.p. 203 ^{20}; s.w.; s.al.
drazine, (2-naphthyl)-. $C_{10}H_7NHNH_2$; m.w. 158.09; col. leaf. f.w.; m.p. 124-5; s.w.; s.al.
drazine, m-nitrophenyl-. $NO_2C_6H_4NHNH_2$; m.w. 153.08; yel. need.; m.p. 93; s.w.; s.al.
drazine, o-nitrophenyl-. $NO_2C_6H_4NHNH_2$; m.w. 153.08; br. red need.; m.p. 90; i.w.; s.al.
drazine, p-nitrophenyl-. $NO_2C_6H_4NHNH_2$; m.w. 153.05; or.-red. leaf or need.; m.p. 157; s.w.; s.al.
drazine orthophosphate. N_2H_4·H_3PO_4; m.w. 130.09; m.p. 82.
drazine, phenyl-. $C_6H_5NHNH_2$; m.w. 108.08; yel. monocl. or oil; m.p. 19.6; s.w.; s.al.
drazine, phenyl-, hydrochloride. $C_6H_5NHNH_2$·HCl; m.w. 144.54; leaf. f.al.; m.p. 240-1; s.w.; s.al.
drazine, 1-phenyl-2-o-tolyl- (o-methylhydrazobenzene). $CH_3C_6H_4NHNHC_6H_5$; m.w. 198.13; col. leaf. f.al.; m.p. 101-2; i.w.; s.al.
drazine, picryl- (2, 4, 6-trinitrophenylhydrazine). $(NO_2)_3C_6H_2NHNH_2$; m.w. 243.08; yel. need.; m.p. 186-7; i.w.; s.al
drazine sulfate. N_2H_4·H_2SO_4; m.w. 130.12; rhomb. col.; s.g. 1.37; m.p. 254; s.w.; i.al.
drazine sulfate, prim-. $2N_2H_4$·H_2SO_4; m.w. 162.17; col. cr.; m.p. 85; s.w.; i.al.
drazine, tetraphenyl-. $(C_6H_5)_2$-$NN(C_6H_5)_2$; m.w. 336.17; rhomb. pr.f.al. + chl.; m.p. 147; i.w.; s.al.
drazine, m-tolyl-. $CH_3C_6H_4NHNH_2$; m.w. 122.09; liq.; b.p. 224.
drazine, o-tolyl-. $CH_3C_6H_4NHNH_2$; m.w. 122.09; col. tab. f. lgr.; m.p. 56; s.al.
drazine, p-tolyl-. $CH_3C_6H_4NHNH_2$; m.w. 122.09; col. rhomb. leaf.; m.p. 61; s.w.; s.al.
drazine, 2, 4, 6-trinitrophenyl-. See hydrazine, picryl-.
drazine, triphenyl-. $(C_6H_5)_2NNHC_6H_5$; m.w. 260.14; need. f. bz.; i.w.; s.al.
drazine, 2, 3-xylyl- ([2, 3-dimethylphenyl]-hydrazine). $(CH_3)_2C_6H_3NHNH_2$; m.w. 136.11; col. need.; m.p. 149-50; s.al.
drazine, 2, 5-xylyl- ([2, 5-dimethylphenyl]-hydrazine). $(CH_3)_2C_6H_3NHNH_2$; m.w. 136.11; need. f. et.; m.p. 85; s.w.; s.al.
drazobenzene. See hydrazine, 1, 2-diphenyl-.
drazobenzene, 4, 4'-diamino- (p, p'-hydrazodianiline; diphenine). NH_2-$C_6H_4NHNHC_6H_4NH_2$; m.w. 214.14; yel. cr.; m.p. 145; s.w.; s.al.
drazobenzene, methyl-. See hydrazine, 1-phenyl-2-tolyl-.
m-hydrazobenzoic acid (m, m'-hydrazodibenzoic acid). $(COOHC_6H_4NH)_2$; m.w. 272.11; yel. cr.f.al.; i.w.; s.al.
o-hydrazobenzoic acid (o, o'-hydrazodibenzoic acid). $(COOHC_6H_4NH)_2$; m.w. 272.11; col. leaf. f.al.; m.p. 205; i.w.; s.al.
p-hydrazobenzoic acid (p, p'-hydrazodibenzoic acid). $(COOHC_6H_4NH)_2$; m.w. 272.11; sm. need. f.al.; i.w.; s.al.
hydrazoic acid (azoimide). HN_3; m.w. 43.03; col. liq.; m.p. −80; b.p. 37; s.w.; s.al.
hydrazonaphthalene. See hydrazine, dinaphthyl-.
hydrazone. Compound of the general formula $R:N·NH_2$.
hydrazophenylene. See phenazine, 5, 10-dihydro-.
hydrazotoluene. See hydrazine, ditolyl-.
hydrindene. See indan.
α-hydrindone. See 1-indanone.
β-hydrindone. See 2-indanone.
hydriodic acid. Water solution of hydrogen iodide (q.v.), an acid comparable in strength with the other halogen acids.
hydrion. Hydrogen ion.
hydroanthranol. See anthranol, 9, 10-dihydro-.
hydrobenzamide (tribenzaldiamine; N, N'-dibenzal-α, α-toluenediamine). $(C_6H_5CH)_2N_2$; m.w. 298.16; col. pr.f.al.; m.p. 101; b.p. 130; i.w.; s.al.
hydrobenzoin (1, 2-diphenyl-1, 2-ethanediol [one form]; tolylene glycol). $C_6H_5CHOHCHOHC_6H_5$; m.w. 214.11; monocl. leaf. f.al.; m.p. 139; b.p. >300; s.al.
hydrobenzoin, α, α'-dimethyl-. See 2, 3-butanediol, 2, 3-diphenyl-.
hydrobenzoin, dodecahydro-. See 1, 2-ethanediol, 1, 2-dicyclohexyl-.
hydroberberine (tetrahydroberberine). $C_{20}H_{21}NO_4$; m.w. 339.17; wh. need. or pa. yel. octahdr. cr.; m.p. 167; i.w.; s.al.
hydrobromic acid. Water solution of hydrogen bromide (q.v.), a strongly acid fluid, fuming when saturated, used largely for the preparation of aliphatic bromides.
hydrocarbon. Any of the class of compounds consisting solely of carbon and hydrogen.
hydrocarbon, polynuclear. See polynuclear hydrocarbon.
hydrocarbostyril (3, 4-dihydro-2 [1]-quinolone; o-aminohydrocinnamic acid

lactam). $C_6H_4NHCOCH_2CH_2$; m.w. 147.08; col. pr.f.al.; m.p. 163; s.w.; s.al.

hydrocatalase. Substance of unknown composition, occurring in mineral waters, which catalyzes decomposition of hydrogen peroxide.

hydrocellulose. Partially hydrolyzed cellulose produced by treatment with hot dilute acids.

hydrocerulignone (4, 4′-dihydroxy-3, 3′, 5, 5′-tetramethoxybiphenyl). $C_{12}H_4(OH)_2(OCH_3)_4$; m.w. 306.14; monocl. pr.f.al.; m.p. 190; s.w.; s.al.

hydrocerussite. See lead basic carbonate.

hydrochloric acid (muriatic acid). Water solution of hydrogen chloride (q.v.), a strong acid, fuming when concentrated; the concentrated acid of common use is 35% HCl and of sp.gr. 1.18; used in galvanizing, preparation of chlorides and chlorine and in manufacture of dyestuffs.

hydrocinchonidine (cinchamidine). $C_{19}H_{24}N_2O$; m.w. 296.20; leaf.; m.p. 230; i.w.; s.al.

hydrocinchonine. See cinchotine.

hydrocinnamaldehyde (3-phenylpropanal). $C_6H_5CH_2CH_2CHO$; m.w. 134.08; col. monocl. pr.f.al.; m.p. 47; b.p. 280; i.w.; s.al.

hydrocinnamic acid (β-phenylpropionic acid; benzenepropionic acid). $C_6H_5CH_2CH_2COOH$; m.w. 150.08; col. monocl. need. f.al.; m.p. 48.6; b.p. 279.8; s.al.

hydrocinnamic acid, α-acetyl-, ethyl ester (ethyl α-benzylacetoacetate). $C_6H_5CH_2CH(COCH_3)COOC_2H_5$; m.w. 220.12; col. liq.; i.w.; s.al.

hydrocinnamic acid, o-amino-, lactam. See hydrocarbostyril.

hydrocinnamic acid, α-amino-. See alanine, β-phenyl-.

hydrocinnamic acid, β-amino-. $C_6H_5CH(NH_2)CH_2COOH$; m.w. 165.09; monocl. f.w.; s.w.; s.al.

hydrocinnamic acid, α-amino-p-hydroxy-. See tyrosine.

hydrocinnamic acid, α, β-dibromo-(l) (i-cinnamic acid dibromide). $C_6H_5CHBrCHBrCOOH$; m.w. 307.87; monocl. pr.; m.p. 203-4; s.al.

hydrocinnamic acid, β, β-dibromo- (3, 3-dibromo-3-phenylpropanoic acid). $C_6H_5CBr_2CH_2COOH$; m.w. 307.89; need. f.w.; m.p. 136; b.p. 138 $^{0.6}$; i.w.; s.al.

hydrocinnamic acid, ethyl ester (ethyl benzenepropanoate; ethyl β-phenyl propionate). $C_6H_5CH_2CH_2COOC_2H_5$; m.w. 178.11; col. liq.; b.p. 249; i.w.; s.al.

hydrocinnamic acid, o-hydroxy-. See melilotic acid.

hydrocinnamic acid, p-hydroxy-. See phloretic acid.

hydrocinnamic acid, α-hydroxy-β-keto-. See glycolic acid, benzoyl-.

hydrocinnamic acid, piperazinium salt. $C_4H_{10}N_2 \cdot 2C_9H_{10}O_2$; m.w. 386.25; wh. cr.; m.p. 150.5-1.5; s.w.; s.al.

hydrocinnamonitrile, β-keto-. See acetonitrile, benzoyl-.

hydrocinnamyl alcohol. See 1-propanol, 3-phenyl-.

hydrocotarnine. $C_{12}H_{15}NO_3 \cdot \frac{1}{2}H_2O$; m.w. 230.13; monocl. pr.f.al.; m.p. 55-6; s.al.

o-hydrocoumaric acid. See melilotic acid.

hydrocyanic acid. See hydrogen cyanide.

hydrocyanite. See copper sulfate(ic).

hydroextractor. See centrifuge.

hydroferricyanic acid. $H_3Fe(CN)_6$; m.w. 214.91; grn-br. need., deliq.; s.w.; s.al.

hydroferrocyanic acid. $H_4Fe(CN)_6$; m.w. 215.92; wh. need. bl. in moist air; s.w.; s.al.

hydrofluoric acid. Water solution of hydrogen fluoride (q.v.), poisonous, fumes in air, used to etch glass.

hydrofuramide. See furfural, hydramide.

hydrogel. Aqueous colloidal gel.

hydrogen. H; at. wt. 1.0081; at. no. 1; m.p. −259° C; b.p. −252.8° C; density 0.0889 g/l; sp.gr. liquid 0.070 (−252° C); valence 1; an element, the lightest of all gases; the first element of the periodic table; occurring chiefly in water combined with oxygen; also in acids, bases, alcohols, petroleum and other hydrocarbons; obtained by displacement from acids by metals, by electrolysis of water or by action of carbon on steam; used as a reducing agent, for producing high temperature flames and in the hydrogenation of fats. For the heavy isotope of hydrogen, at. wt. 2, see deuterium.

hydrogen bromide. HBr; m.w. 80.92; col. gas or pale yel. liq.; d. 3.50° g/l; s.g. lq. 2.77^{-67}; m.p. −88.5; b.p. −67.0; s.w.; s.al.

hydrogen bromide (hydrated). $HBr \cdot H_2O$; m.w. 98.94; col. liq.; s.g. 1.78. $HBr \cdot H_2O$ (47.8%). m.w. 98.94; col. liq.; s.g. 1.49; m.p. −11; b.p. 126; s.w.; s.al.

hydrogen chloride. HCl; m.w. 36.46; col. gas. or col. pois. fum. liq.; d. 1.639° g/l; s.g. lq. 1.194^{-86}; m.p. −112; b.p. −83.7; s.w.; s.al.

hydrogen chloride (hydrated). $HCl \cdot H_2O$ (45.2%).; m.w. 54.48; col. liq.; s.g. 1.48; m.p. −15.35; s.w.; s.al.
$HCl \cdot 2H_2O$; m.w. 72.50; col. liq.; s.g. lq. 1.46 $^{15.5}$; m.p. −17.7; s.w.; s.al.
$HCl \cdot 3H_2O$; m.w. 90.51; col. liq.; m.p. −24.4; s.w.; s.al.

hydrogen cyanide (hydrocyanic acid; prussic acid). HCN; m.w. 270.2; col. liq. or pois. gas; sp.gr. .901 g/l.; .699 ^{20}; m.p. −14; b.p. 26; s.w., s.al.; extremely poisonous, used as horticultural fumigant.

hydrogen electrode. A noble metal coated with an adherent layer of finely divided noble metal, to increase its surface, which is saturated with hydrogen gas.

hydrogen electrode, normal. A hydrogen electrode taken as having a zero potential at all temperatures under one atmosphere pressure of hydrogen in a solution of unit hydrogen activity.

hydrogen equivalent. Number of replaceable hydrogen atoms in one molecule or the number of atoms of hydrogen with which one molecule can react.

hydrogen fluoride. HF; m.w. 20.01; col. fum. corros. liq. or gas; d. 0.921 g/l; s.g. lq. 0.987; m.p. −92.3; b.p. 19.4; s.w.

hydrogen fluoride (hydrated). $HF \cdot H_2O$ (35.35%); m.w. 38.02; col. liq.; s.g. 1.15; m.p. −35; b.p. 120; s.w.

hydrogen iodide. HI; m.w. 127.93; col. gas. or pa. yel. liq.; d. 5.66° g/l; s.g. lq. 2.85^{-47}; m.p. −50.8; b.p. −50.8; b.p. −35.38; s.w.; s.al.

hydrogen iodide (hydrated). $HI \cdot H_2O$; m.w. 145.94; col. or. pa. yel. fum. liq.; s.g. 1.70 ^{15}; b.p. 127 ^{774}; s.w.; s.al.
$HI \cdot 2H_2O$; m.w. 163.96; col. liq.; m.p. −43; s.w.
$HI \cdot 3H_2O$; m.w. 181.97; col. liq.; m.p. −48; s.w.
$HI \cdot 4H_2O$; m.w. 199.99; col. liq.; m.p. −36.5; s.w.

hydrogen-ion concentration. The measure of the acidity of a solution. See pH.

hydrogen methyl sulfate. See methylsulfuric acid.

hydrogen, ortho. Hydrogen in which the wave functions (spin of protons) are symmetrical.

hydrogen overvoltage. Difference between actual cathode potential for hydrogen evolution and the equilibrium (theoretical) potential of hydrogen in the same electrolyte.

hydrogen oxide (water). H_2O; m.w. 18.02; col. liq. or hex. col. cr.; s.g. 1.0004, s. 0.9168°; m.p. 0; b.p. 100; s.al.

hydrogen oxide, per-. H_2O_2; m.w. 34.02; col. liq.; s.g. 1.4631°; m.p. −1.7; b.p. 152.1; s.w.; s.al. used as a bleaching agent.

hydrogen, para. Hydrogen in which the wave functions (spin of the protons) are anti-symmetrical.

hydrogen phosphide (phosphine). H_3P; m.w. 34.04; col. pois. spon. infl. gas or col. liq.; d. 1.529° g/l; s.g. liq. 0.746^{-30}; m.p. −133.5; b.p. −87.4; s.w.; s.al.

hydrogen phosphide. H_4P_2; m.w. 66.07; col. liq.; s.g. 1.012; m.p. < −10; b.p. 57.5 ^{735}; i.w.; s.al.

hydrogen phosphide. $(H_3P_4)_x$; m.w. 378.29; yel. solid; s.g. 1.83 ^{15}; i.w.; i.al.

hydrogen selenide. H_2Se; m.w. 81.22; col. gas.; d. 3.614 g/l; s.g. lq. 2.12^{-42}; m.p. −64; b.p. −42; s.w.

hydrogen sulfide. H_2S; m.w. 34.08; col. gas; d. 1.539° g/l; s.g. lq. 96; m.p. −82.9; b.p. −61.80; s.w.

hydrogen sulfide, di-. H_2S_2; m.w. 66.14; yel. oil; s.g. 1.376; m.p. −88; b.p. 74.5; i.al.

hydrogen sulfide, tri-. H_2S_3; m.w. 98.20; bright yel. liq.; s.g. 1.496 ^{15}; m.p. −52.

hydrogen telluride. H_2Te; m.w. 129.52; col. gas; d. 5.81 g/l; s.g. lq. 2.57^{-20}; m.p. −48; b.p. −1.8; s.w.; s.al.

hydrogenation. The addition of hydrogen to unsaturated compounds in the presence of a catalyst, e.g. the conversion of oils to fats in presence of finely divided nickel.

Hydrogenite. A dry mixture of ferrosilicon and sodium hydroxide, liberating hydrogen upon the addition of water.

hydrohematite. See turgite.

hydrohydrastinine. $C_{11}H_{13}NO_2$; m.w. 191.11; wh. cr.; m.p. 66; s.al.

Hydrol. Mother liquor after glucose has been crystallized from the acid hydrolysis of starch.

hydrolase. An enzyme causing hydrolytic change of carbohydrates, fats and proteins.

hydrolysis. A reaction wherein water effects a double decomposition with another compound, hydrogen going to one component, hydroxyl to the other.

Hydrolyte. Calcium hydride, CaH_2.

hydromagnesite. See magnesium basic carbonate.

hydrometer. An instrument for determining specific gravity, consisting of a tube designed to float upright, and carrying a scale of readings.

hydron blue. A sulfur color similar to indigo.

α-hydronaphthoquinone. See 1, 4-naphthalenediol.

Hydrone. Sodium lead alloy used for conveniently producing pure hydrogen.

hydronephelite. A mineral, $HNa_2AlSi_2O_{12} \cdot 3H_2O$; hex., wh., dk. gray.; sp.gr. 2.263-2.48; hardness 4.5-6.0.

hydronium ion. See hydroxonium ion.

Hydronyx. Sodium sulfoxylate.

hydrophile. See emulsoid.

hydrophilic. Having an affinity for water.

hydrophilite. See calcium chloride.

hydrophlorone. See hydroquinone, 2, 5-dimethyl-.

hydrophobe. See suspensoid.

hydrophobic. Having no affinity for water.

hydrophobing. Chemical alteration of textile fibers which makes them water repellent.

hydropolymerization. Simultaneous polymerization and hydrogenation.

hydroponics. Crop production in liquid culture media.

hydroquinine. $C_{20}H_{26}N_2O_2$; m.w. 326.32+$2H_2O$; need. f. chl. or et.; m.p. 168; s.w.; s.al.; a photographic developing agent.

hydroquinone (1, 4-benzenediol; quinol; hydroquinol; p-dihydroxybenzene). $C_6H_4(OH)_2$; m.w. 110.05; col. hex. pr.f.w.; m.p. 170.5; b.p. 286.2; s.al.

hydroquinone, 2-acetyl-. See acetophenone, 2, 5,-dihydroxy-.

hydroquinone, bromo- (2-bromo-1, 4-benzenediol). $BrC_6H_3(OH)_2$; m.w. 188.96; leaf. f. pet. eth.; m.p. 110-1; s.w.; s.al.

hydroquinone carboxylic acid. See gentisic acid.

hydroquinone-2-carboxylic acid, 5-hydroxy-. See benzoic acid, 2, 4, trihydroxy-.

hydroquinone, chloro- (2-chloro-1, benzenediol; chloroquinol). $ClC_6H_3(OH)_2$; m.w. 144.50; monocl. le f.chl.; m.p. 106; b.p. 263; s.w.; s.

hydroquinone, diacetate (quinol acetate; p-phenylene diacetate; acetylhydroquinone). $C_6H_4(OOCCH_3)_2$; m.w. 194.08; pl. or leaf. f.a m.p. 124; s.w.; s.al.

2, 5-hydroquinodicarboxylic acid. See terephthalic acid, 2, 5-dihydroxy-.

hydroquinone diethyl ether. See benzene, 1, 4-diethoxy-.

hydroquinone, 2, 3-dimethyl- (2, dimethyl-1, 4-benzenediol; o-xyl hydroquinone; 3, 6-dihydroxy-xylene). $(CH_3)_2C_6H_2(OH)_2$; m.w. 138.08; cr.f.w.; s.w.; s.al.

hydroquinone, 2, 5-dimethyl- (2, dimethyl-1, 4-benzenediol; p-xyl hydroquinone: hydrophlorone; hydr p-xyloquinone; 2, 5-dihydroxy-xylene). $(CH_3)_2C_6H_2(OH)_2$; m.w. 138.08; leaf. f.w.; m.p. 217; s.w.; s.

hydroquinone, 2, 6-dimethyl- (2, dimethyl-1, 4-benzenediol; 2, 5-d hydroxy-m-xylene). $(CH_3)_2(OH)_2C_6H_2$; m.w. 138.08; need. f. xylen m.p. 149-51; s.al.

hydroquinone dimethyl ether. See benzene, 1, 4-dimethoxy-.

hydroquinone, dithio- (1, 4-benzen dithiol; p-phenylene dimercaptan $C_6H_4(SH)_2$; m.w. 142.17; hex. le f.dil.al.; m.p. 98; s.w.; s.al.

hydroquinone, hydroxy-. See 1, 2, benzenetriol.

hydroquinone, 2-isopropyl-5-methyl-. See thymoquinone.

hydroquinone, 2-methyl-. See tol hydroquinone.

hydroquinone, monoamyl ether. See phenol, p-amoxy-.

hydroquinone, monobutyl ether. See phenol, p-butoxy-.

hydroquinone, monoethyl ether. See phenol, p-ethoxy-.

hydroquinone, monoheptyl ether. See phenol, p-heptyloxy-.

hydroquinone, monohexyl ether. See phenol, p-hexyloxy-.

hydroquinone, monomethyl ether. See phenol, p-methoxy-.

hydroquinone, monooctyl ether. See phenol, p-octyloxy-.

hydroquinone, monopropyl ether. See phenol, p-propoxy-.

hydroquinone phthalein (2, 7-dihydrox fluoran). $C_{20}H_{12}O_4$; m.w. 332.0 need. f.et.; m.p. 232-4; s.w.; s.al.

hydroquinone, tetrachloro- (tetrachlo 1, 4-benzenediol). $C_6Cl_4(OH)_2$; m 247.84; col. monocl. f.bz.; m.p. 2 i.w.; s.al.

hydroquinone, trichloro-. $Cl_3C_6H(OH)_2$; m.w. 213.39; col. pr. f.w.; m.p. 13 s.al.

hydroresorcinol. See 1, 3-cyclo hexa dione.

hydrosol (aquasol). A colloidal soluti in water.

hydrosphere. In geology, that porti of the globe which is covered w water.

hydrostatics. Study of the mechanics liquids in a state of equilibrium.

hydrosulfide (sulfhydrate). Salt co taining the —HS group.

hydrosulfite. Salt containing the —S_2 group.

Hydrosulfite A. W. See Discolite.

hydrotalcite. A mineral, $M_6CO_3(OH)_{16} \cdot 4H_2O$; he wh., sp.gr. 2.04-2.091; hardness

hydroterpene. Hydrogen additi product of the terpenes still contain at a least one ethylenic double bo e.g. p-menthene.

hydrotoluguinone. See toluhydr quinone.

hydroxide. Designation for basic co pounds containing the —OH gro

oxonium ion. Hydrogen ion combined with one molecule of water in aqueous solution, and represented as H_3O^+.

roxy benzoic acid. See benzoic acid, -, o-, or p-hydroxy.

roxyhydraquinone. See 1, 2, 4-enzenetriol.

roxyl. See hydroxy under organic adical prefixes.

roxylamine. NH_2OH; m.w. 33.03; h. need. or col. liq., deliq.; s.g. 204; m.p. 33.05; b.p. 56.5; s.w.; s.al.

roxylamine benzoate. $NH_2OH \cdot C_6H_5COOH$. m.w. 153.08; wh. cryst. owd.; s.w., s.al.; reducing agent, ntiseptic, preservative, oxidation nhibitor.

roxylamine, benzyl- (β[or N]-)benzylydroxylamine). $C_6H_5CH_2NHOH$; n.w. 123.08; need. f.lgr.; m.p. 57; .w.

droxylamine, o(or O)-benzyl-. See enzyloxyamine.

droxylamine, ethyl- (β-ethylhydroxylmine). C_2H_5NHOH; m.w. 61.06; ol. leaf. or need. f. lgr.; s.w.; s.al.

droxylamine, o-ethyl-. See ethoxymine.

droxylamine fluosilicate. $(NH_2OH)_2 \cdot H_2SiF_6 \cdot 2H_2O$; m.w. 246.17; scales; s.w.; i.al.

droxylamine hydrochloride. $NH_2OH \cdot HCl$; m.w. 69.50; monocl. col.; s.g. 1.67 ^{17}; m.p. 151; s.w.; s.al.

droxylamine, methyl- (β-methylhydroxylamine). CH_3NHOH; m.w. 47.05; hyg. pr.; m.p. 42; b.p. 62. 5^{15}; s.w.; s.al.

droxylamine, o-methyl-. See methoxyamine.

droxylamine nitrate. $NH_2OH \cdot HNO_3$; m.w. 96.05; wh.; m.p. 48; s.w.; s.al.

droxylamine, phenyl- (β-phenylhydroxylamine). C_6H_5NHOH; m.w. 109.06; col. need.; m.p. 82; s.w.; s.al.

droxylamine, propyl-. $CH_3CH_2CH_2NHOH$; m.w. 75.08; need. f. et.; m.p. *ca* 46; s.w.; s.al.

droxylamine sulfate. $(NH_2OH)_2 \cdot H_2SO_4$; m.w. 164.14; monocl. col.; m.p. 170; s.w.; s.al.

hydroxylamine, m-tolyl-. $CH_3C_6H_4NHOH$; m.w. 123.08; leaf. f.bz., et.; m.p. 68; s.w.; s.al.

hydroxylamine, o-tolyl- (β[or N]-o-tolylhydroxylamine). $CH_3C_6H_4NHOH$; m.w. 123.08; col. need. f.bz., et.; m.p. 44; i.w.; s.al.

hydroxylamine, p-tolyl-. $CH_3C_6H_4NHOH$; m.w. 123.08; col. leaf. f.bz.; m.p. 94; s.al.

hydroxyphenylglycine, para- (glycine). $HOC_6H_4NHCH_2COOH$; m.w. 151.07; colorl. leaflets; m.p. 240; s.w.; s.al.

hydroxyquinol. See 1, 2, 4-benzenetriol.

hydrozincite (zinc bloom). $ZnCO_3 \cdot 2Zn(OH)_2$; sp.gr. 3.58-3.8; wh.-yel.

Hydryzing. Process of heat treating metals in atmosphere of hydrogen.

hyenic acid. $C_{34}H_{41}COOH$; m.w. 382.39; cr.f.et.; m.p. 78; i.w.; s.al.

hygrograph. A clock-driven mechanism which records continuously the humidity of the air.

hygrometer. An instrument for determining the humidity of the air.

hygroscopic. Absorbing water from the air.

hylotropic phase. Phase change with change in composition.

hymolal salt. A detergent, not a true soap, of which the calcium salt is as soluble as the sodium salt; e.g. Drene.

hyoscine (l-scopolamine). $C_{17}H_{21}NO_4$; m.w. 303.17; col. syrup; m.p. 55; s.w.; s.al.

hyoscine, hydrobromide. $C_{17}H_{21}NO_4 \cdot HBr \cdot 3H_2O$; m.w. 438.14; col. rhomb. cr.f.w.; m.p. anh. 194; s.w.

hyoscine, sulfate (l-scopolamine sulfate). $(C_{17}H_{21}NO_4)_2 \cdot H_2SO_4 \cdot 2H_2O$; 740.45; wh. micr. need. f.w.; s.w.; s.al.

dl-hyoscyamine. See atropine.

d-hyoscyamine. $C_{17}H_{23}NO_3$; m.w. 289.19; silky. need. f.w. + al.; m.p. 106; s.al.

hyoscyamine (l-hyoscyamine; daturine; duboisine). $C_{17}H_{23}NO_3$; m.w. 289.19; wh. need.; m.p. 106-8; s.al.

hyoscyamine, hydrobromide. $C_{17}H_{23}NO_3 \cdot HBr$; m.w. 370.11; wh. deliq.; pr.; m.p. 152; s.w.; s.al.

hyoscyamine, hydrochloride. $C_{17}H_{23}NO_3 \cdot HCl$; m.w. 325.65; wh. cr.; m.p. 149-51; s.w.; s.al.

hyoscyamine, sulfate. $(C_{17}H_{23}O_3N)_2 \cdot H_2SO_4 \cdot 2H_2O$; m.w. 712.48; need. f.al.; anh. 206; s.w.; s.al.

hyoscyamus. See henbane.

d-hypaphorine. $C_{14}H_{18}N_2O_2 \cdot 2H_2O$; m.w. 282.19; lg. monocl. cr.f.w.; m.p. anh. 255.

hyperbola. A conic section, the curve formed by passing a plane through a cone parallel to its vertical axis.

hyperbolic. Relating to or having the shape of a hyperbola.

hyperfine structure. Structure of spectral line depending on angular momentum in atomic nucleus, making each ordinary line a multiplet.

hyperglycemia. An excess of glucose in the blood.

hypericum (St. John's bread; St. John's wort). The plant h. perforatum; br. mix. of leaves and twigs; used in medicine.

hypernic (Brazil wood). The redwood of commerce, extracts of which are used in inks, woodstaining, and dyestuffs.

hypernik. A nickel-iron alloy (50:50) which is specially treated; has a very high permeability at low flux densities; used in instrument transformers.

hypersthene. A mineral, an orthorhombic pyroxene, $(Fe,Mg)SiO_3$, containing sometimes up to 10% Al_2O_3; sp.gr. 3.4-3.5; see also enstatite.

hyperthyroidism. Condition produced by excessive secretion of the thyroid gland.

hypnal (antipyrine chloral hydrate; chloral-antipyrine). $C_{11}H_{12}N_2O \cdot CCl_3CH(OH)_2$. m.w. 353.50; rhomb. cr.; m.p. 68; s.w.; s.al.

hypnone. See acetophenone.

hypo-. Prefix indicating a lesser oxygen content in a salt or acid, e.g. sodium hypochlorite, NaClO which contains less oxygen than the chlorate, $NaClO_3$.

hypobromous acid. See bromous acid, hypo-.

hypochlorite. See chlorite, hypo-.

hypochlorous acid. See chlorous acid, hypo-.

hypocycloid. Curve traced by a point on the circumference of a circle which rolls on the inside rim of a fixed circle.

hypogeic acid (artificial) (7-hexadecenoic acid). $CH_3(CH_2)_7CH:CH(CH_2)_8COOH$; m.w. 254.23, col. need.; m.p. 33; b.p. 236 ^{15}; i.w.; s.al.

hypoglycemia. Deficiency of glucose in the blood.

hypophosphite. See phosphite, hypo-.

hypophosphoric acid. See phosphoric acid, hypo-.

hypophosphorous acid. See phosphorous acid, hypo-.

hyposulfurous acid. See sulfurous acid, hypo-.

hypotenuse. The side of a right-angled triangle opposite the right angle.

hypothesis. A proposed explanation for observed phenomena, which remains to be critically tested by further observation. See theory.

hypoxanthine (6[1]-purinone; 6-oxypurine; sarcine). $C_5H_4N_4O$; m.w. 136.06; need.; s.al.

hypoxanthine, 2-amino-. See guanine.

hypsometer. Device for estimating height above sealevel by measuring boiling points.

hypsotonic. Causing an increase in the surface tension of water.

hyssop. Hyssopus officinalis, a medicinal herb containing hyssop oil which is used in perfumery, medicine, and liqueur manufacture.

hystazarin (2, 3-dihydroxyanthraquinone: hystazin). $C_6H_4(CO)_2C_6H_2(OH)_2$; m.w. 240.06; yel. need. f.ac.a.; m.p. 260; s.al.

hysteresis. In gels, the designation for weakening of gelling properties brought about by repeated gelation and drying.

hysteresis, magnetic. Property by which magnetic induction for a given magnetizing force depends upon previous conditions of magnetization.

hyzone. See tritium.

I

I value. Value of quantum number I from which the internal angular momentum of an atomic nucleus is determined.

-ic. Suffix denoting higher oxygen content of an acid than the corresponding -ous acid, e.g. sulfuric acid, containing more oxygen than sulfurous acid, H_2SO_3; denoting the higher valence of a metal, e.g. ferric (3+) as compared with ferrous (2+).

ice, dry. See dry ice.

ice-point. Freezing point of water.

ice stone. See cryolite.

Iceland moss. A lichen, cetraria islandica; used as food and in medicine.

Iceland spar. See calcite.

ichthyocoll. See isinglass.

ichthyol. See ammonium ichthyol sulfonate.

-ide. Suffix denoting salts of oxygen free acids, e.g. sodium chloride, NaCl.

ideal gas. A gas behaving exactly in accordance with Boyle's law.

-idene. Suffix which when added to any radical usually means a double bond at the point of attachment.

idiochromatic. Having photoelectric properties not due to impurities, a property of certain crystals.

idioelectric. Electrifiable by friction.

idiomolecular exchange. Constant interchange of molecules between grains of ice in glaciers.

idocrase. See vesuvianite.

idryl. See fluoranthene.

Igepal. Wetting agent of type formula $R_1—O—R_2—O—R_2O \ . \ . \ . \ O—R_2—OH$ where R_1 is an aliphatic straight or branched residue and R_2 usually the C_2H_4 group.

Igepon A. Oleyl ester of isethionic acid.

Igepon T. $C_{17}H_{33}CONHC_2H_4SO_3Na$; a wetting and emulsifying agent and detergent used in the textile industry.

Igewsky's reagent. Carbon steel etching solution, 5% picric acid in absolute alcohol, used in microanalysis.

igneous rock. Rock formed by solidification of lava.

ignition temperature. Lowest temperature at which chemical reaction in a given gaseous medium becomes self-sustained.

Ihrigizing. Method of driving silicon into iron articles to make them more resistant.

illinium. Il; at. wt. 146?; member of the cerium group of rare earths, occurring in exceedingly minute traces in monazite, gadolinite, and xenotime.

Illium. An alloy containing Ni, Cr, Cu, Mo, W, Fe, Mn, Al (63:21:6.5:5:2:-1:1:1).

illumination. The density of the luminous flux on a surface; the quotient of the flux by the area of the surface when the latter is uniformly lighted.

ilmenite (menaccanite, titanic iron ore). A mineral, $FeO \cdot TiO_2$; hex. (trig.), iron-brnsh. blk.; sp.gr. 4.44-4.90; hardness 5-6.

image force. Attraction between a concentrated charge on an electron, or other small body, and its electric image in a nearby conductor from which the electron was discharged.

imaginary number. Quantity or value represented by the square root of a negative quantity.

imbibition. Preliminary swelling of certain colloids in water.

imesatin (3-iminoöxindole). C_6H_4NH-$COC:NH$; m.w. 146.06; yel. pr.; i.w.; s.al.

imidazole (glyoxaline; iminazole). $NHCH:NCH:CH$; m.w. 68.05; col. pr. m.p. 90; b.p. 256; s.w.; s.al.

imidazole, benz-. See benzimidazole.

4-imidazolecarboxylic acid, tetrahydro-4-hydroxy-2, 5-diketo-. See alloxanic acid.

imidazole, 4, 5-dihydro-2, 4, 5-triphenyl-. See amarine.

2, 4-imidazoledione, 5-hydroxy-. See allanturic acid.

imidazole, 1-methyl- (N-methylglyoxaline). $N(CH_3)CH:NCH:CH$; m.w. 82.06; m.p. −6; b.p. 197-9; s.w.

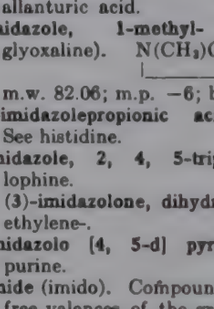
5-imidazolepropionic acid, α-amino-. See histidine.

imidazole, 2, 4, 5-triphenyl-. See lophine.

2 (3)-imidazolone, dihydro-. See urea, ethylene-.

imidazolo [4, 5-d] pyrimidine. See purine.

imide (imido). Compound in which two free valences of the group =NH are attached to acyl groups, as in phthalimide,



imidine. Derivative of an acid amide, e.g. $R—C(=NH)—NH_2$

imido ester. Compound containing the enol-lactim structure $R—C(OR')=NR''$, e.g. ethyl imidobenzoate.

iminazole. See imidazole.

imine (imino-). Compound in which two free valences of the =NH group are attached to an alkyl group, as in all secondary amines and in compounds of the type $R \cdot CH:NH$.

imino ether. Oxygen derivative of an amide in which the ethyl radical is attached to oxygen, e.g. $C_6H_5—C(=N—H)—O—C_2H_5$

impact failure. Instantaneous rupture without plastic distortion, under instantaneously applied stress.

impact head (operating pressure). Sum of static pressure and velocity head of a gas leaving a fan.

impact parameter. Distance of initial line of motion of a scattered particle from center of the scattering field.

impact strength. Measure of toughness of a material, as the energy required to break a specimen in one blow.

impedance. Total opposition to the flow of an alternating current in a circuit, the combined effect of resistance and reactance.

imperatorin. See peucedanin.

Imperial gallon. Unit of volume used in Great Britain and Canada, equal to 4.540 liters or 1.20032 U. S. gallons.

impsonite. An asphalt.

impulse. Time integral of a quickly applied force.

in situ. In its original position, situation, or bed.

in vitro. Literally, "in glass," pertaining to a reaction or experiment carried out in the chemist's apparatus outside of and without the aid of a living agency.

in vivo. In the living body, pertaining to chemical processes within the living organism.

incandescence. Emission of light by a substance due to its high temperature.

incandescent mantle. See gas mantle.

incineration. Burning, ignition, reduction to ashes.

increment. An addition or increase, increase in the value of a variable.

incubation. The period of a disease between exposure and first symptoms; in the culture of microörganisms the favoring of their growth by maintenance of proper temperature.

indaconitine (acetylbenzoylpseudaconine). $C_{34}H_{47}NO_{10}$; m.w. 629.37; cr.; i.w.; s.al.

indamine. Dyestuff obtained from indo-anilines by replacing the quinone oxygen by the NH_2 group, e.g. $NH_2 \cdot C_6H_4 \cdot N:C_6H_4:NH$ (indamine).

indan (hydrindene; 2, 3-dihydroindene). $C_6H_4CH_2CH_2CH_2$; m.w. 118.08; col. liq.; b.p. 176.5; i.w.; s.al.

1-indanone (1-ketoindan; α-hydrindone). $C_6H_4COCH_2CH_2$; m.w. 132.06; rhomb. need. f.w.; m.p. 41; b.p. 244; s.w.; s.al.

2-indanone (2-ketoindan; β-hydrindone). $C_6H_4CH_2COCH_2$; m.w. 132.06; need. f.al.; m.p. 61; i.w.; s.al.

indanthrene (N, N'-dihydroanthraquinonazine). $C_{28}H_{14}N_2O_4$; m.w. 442.13; bl. powd.; i.w.; i.al.

indanthrene colors. Vat dyes derived from anthraquinone, distinctive in that they are highly colored in the alkaline reduction vat.

indanthrene golden orange. See pyranthrene.

indene. $C_6H_4CH_2CH:CH$; m.w. 116.06; col. liq.; m.p. −2; b.p. 182.4; i.w.; s.al.

indene, 2, 3-dihydro-. See indan.

index of refraction. Ratio of the velocity of light in a vacuum to its velocity in the substance or the ratio of the sine of the angle of incidence to the sine of the angle of refraction.

India gum. See gum karaya.

India rubber. See caoutchouc.

Indian balsam. See Peru balsam.

Indian geranium oil. See oil, palmarosa.

Indian grass oil. See oil, palmarosa.

Indian ink. Chinese ink, a black powder, usually in sticks, made from carbon prepared by burning camphor, containing glue of gelatine.

Indian millet. See sorghum.

Indian tobacco. See lobelia.

Indian turmeric. See hydrastis.

indican (of plants). $C_{14}H_{17}NO_6 \cdot 3H_2O$; m.w. 349.19; br. rhomb.; m.p. 51-7, anh. 100-2; s.w.; s.al.

indicator. A substance which in solution changes color or becomes colorless as the hydrogen ion concentrat reaches a definite value, these val varying with the indicator; used small amounts to test acidity, basic neutrality and the presence of cert substances; examples of indicat are litmus and p-nitrophenol.

indicator diagram. Graph made indicator of a steam-engine.

indicatrix. Vectorial ellipsoid show relative refractive indices of a crys in different directions.

indigo; indigo blue. See indigotin.

indigo carmine. See 5, 5'-indigotin sulfonic acid, disodium salt.

indigoid. One of a group of dyestu related in structure and properties indigo blue. Many of them are halogen substitution products.

indigopurpurin. See indirubin.

indigo red. See indirubin.

indigo, soluble. See 5, 5'-indigotin sulfonic acid, disodium salt.

indigotin (indigo; indigo blue). $C_{16}H$ N_2O_2; m.w. 262.09; rhomb., pur i.w., i.al.

4, 4'-indigotin dicarboxylic acid. $C_{18}H$ N_2O_6; m.w. 350.09; blue powd.; i. i.al.

5, 5'-indigotin disulfonic acid. $C_{16}H$ $N_2O_8S_2$; m.w. 422.21, blue am s.w.; s.al.

5, 5'-indigotin disulfonic acid, disodi salt (indigo carmine; soluble indi $C_{16}H_8N_2Na_2O_8S_2$; m.w. 466.19; b powd.; s.w.; s.al.

indigotin sulfonic acid. $C_{16}H_{10}N_2O$ m.w. 342.15; purp.; s.w.; s.al.

indigo white (leucoindigo). $C_{16}H_{12}N_2$ m.w. 264.11; wh. powd.; i.w.; s.al.

indirubin (indigo red; indigopurpur $C_{16}H_{10}N_2O_2$; m.w. 262.09; br. ne i.w.; s.al.

indium. In; at. wt. 114.76; tetr. s wh. soft. met.; s.g. 7.31; m.p. 1 b.p. 1450; i.w.; a rare metal occurr in some zinc ores.

indium bromide, di-. $InBr_2$; m 374.59; pa. yel. solid.

indium bromide, mono-. InBr; m 194.68; red.-br. solid.

indium bromide, tri-. $InBr_3$; m 354.51; v. sl. yel. need., deliq.; s

indium chlorate, per-. $In(ClO_4)_3 \cdot 8H$ m.w. 557.26; deliq. cr.; m.p. 80; s

indium chloride, di-. $InCl_2$; m 185.67; pa. yel. to wh. cr., deliq.

indium chloride, mono-. InCl; m 150.22; dk. red solid, deliq.

indium chloride, tri-. $InCl_3$; m 221.13; wh. pl., deliq.; s.g. 4.; s.w.; s

indium cyanide. $In(CN)_3$; m.w. 192 wh. ppt.

indium fluoride. $InF_3 \cdot 3H_2O$; m 225.81; m.p. $-3H_2O$ 100; i.al.

indium fluoride. $In_2F_6 \cdot 18H_2O$; m 667.80; need.; s.w.; i.al.

indium hydroxide. $In(OH)_3$; m 165.78; wh. ppt.; m.p. $-H_2O$ <1 i.w.

indium iodate. $In(IO_3)_3$; m.w. 639. cryst.

indium iodide, di-. InI_2; m.w. 368 m.p. 212.

indium iodide, mono-. InI; m.w. 241 br.-red solid, m.p. 351; b.p. 700;

indium iodide, tri-. InI_3; m.w. 495 yel. cr. deliq.; m.p. 199; s.w.

indium nitrate. $In(NO_3)_3 \cdot 3H_2O$; m 354.83; deliq. plates; m.p. −2 100; s.w.; s.al.

indium nitrate. $In(NO_3)_3 \cdot 4\frac{1}{2}H_2O$; m

.85; need. deliq.; m.p. $-4\frac{1}{2}H_2O$, ; s.w.; s.al.

m oxide, mon-. InO; m.w. 130.76; .; i.w.

m oxide, tri-. In_2O_3; m.w. 277.52; l-br., hot; pa. yel., cold.; amor. and g.; s.g. 7.179; i.w.

m selenate. $In_2(SeO_4)_3 \cdot 10H_2O$; w. 839.28; deliq. cr.; s.w.

m sulfate. $In_2(SO_4)_3$; m.w. 517.70; -gray powd., hyg.; s.g. 3.438; s.w.

m sulfate (hydrated). $In_2(SO_4)_3 \cdot I_2O$; m.w. 679.84; s.w.

m sulfate, hydro-. $In_2(SO_4)_3 \cdot SO_4 \cdot 8H_2O$; m.w. 759.90; cr.; s.w.

m sulfide, tri-. In_2S_3; m.w. 325.70; d. cr. or yel. ppt.; s.g. 4.90; m.p. 50; i.w.

m sulfite. $2In_2O_3 \cdot 3SO_2 \cdot 8H_2O$. w. 891.34. cr.; m.p. $-3H_2O$ 100; p. $-8H_2O$ 260; i.w.

le (benzo[b]pyrrole). C_6H_4NH-$H:CH$; m.w. 117.06; col. leaf. f.w.; .p. 52.5; b.p. 254; s.w.; s.al.

le, 1-acetyl-. $CH_3CONCH:CH$-$_6H_4$; m.w. 159.08; liq.; b.p. 152-3 ^{14}.

dolecarboxylic acid, 3-hydroxy-. See ndoxylic acid.

le, 2-methyl- (α-methylindole; ethylketole). $CH_3NC_8H_6$; m.w. 131.08; need. or leaf.; m.p. 59; b.p. 272.3; s.w.; s.al.

le, 3-methyl-. See skatole.

ndolepropionic acid, α-amino-. See ryptophan.

-indolinedione. See isatin.

ndolol. See indoxyl.

3)-indolone. See oxindole.

ophenin. $(C_{12}H_7NOS)_x$; m.w. 213.12)$_x$; bl. need.; i.w.; s.al.

ophenine reaction. An intense blue coloration given by thiophene or its derivatives when treated with concentrated sulfuric acid and a trace of isatin.

ophenol. A group of phenolic dyestuffs.

doxyl (3-indolol). $C_6H_4NHCH:COH$; m.w. 133.06; oil.; m.p. 85; b.p. 110.

doxylic acid (3-hydroxy-2-indolecarboxylic acid). $C_6H_4NHC(COOH)C$-OH; m.w. 177.06; tricl.; b.p. sub. 123; s.w.; d.h.w.

doxyl, 1-nitroso- (isatoxime). C_6H_4-$N(NO)CH:COH$; m.w. 162.06; yel. need.; m.p. 202; s.w.; s.al.

duced dipole (electrical duplet). A molecule (originally non-polar) which is distorted in an electrical field.

ductance. Resistance encountered to change of e.m.f. in a circuit due to the self induced e.m.f. caused by variation of the magnetic field, the direction of the latter e.m.f. being such as to always counteract current changes, also an electrical unit in which this property is pronounced.

duction. Magnetization or electrification produced in a body by its position near a magnetized or electrified body; production of an electric current in a conductor by means of a varying magnetic field near it.

duction coil. A device for producing high voltages from a low voltage direct current source such as a battery, consisting of a primary coil carrying the low voltage current, mechanically interrupted, and a surrounding secondary coil of many turns, in which the high voltage is induced.

duction, intrinsic. At any point in a magnetic body, the excess of the induction at the point over that produced in a vacuum by the magnetizing force of the value acting at the point.

duction, magnetic. A vector quantity which, at any point in a magnetic field, determines the e.m.f. induced in an elementary conductor that is moving thru the field at that point.

induction, mathematical. Reasoning by which a general truth or law is established from a known fact and a conditional principle.

induction, mutual. See mutal induction.

indulines. Blue dyes belonging to the safranine group.

Indur. Synthetic tar-acid resin.

Indurite. Synthetic tar-acid resin for molding and laminating.

Indusoil. Proprietary brand of tallol. Refined pine fatty acids.

-ine (idine). Suffix of basic compounds of nitrogenous heterocycles not ending in -ine, e.g. pyroline.

inertia. Resistance offered by a body to a change of its state of rest or motion.

infinitesimal. Approaching zero as a limit.

infinitesimal, principal. Difference between independent variables and their limits.

inflection, point of. Point at which a curve crosses its tangent.

influence function. Deflection of foundation, of a beam, at any point due to a concentrated load at some other point.

infra. Prefix meaning below, beneath, under or after, e.g. infra-red.

infra red rays. Heat rays overlapping the long wave end of the visible spectrum, does not affect the eye; penetrates fog.

infrasonic. Having a frequency below human audible range.

infundibuliform. Funnel-shaped.

infusion. Aqueous extract of vegetable drugs.

infusorial earth (kieselgühr, diatomite, tripolite, diatomaceous earth, ceyssatite, fossil flour, terra silicea.). A fine powder composed of siliceous skeletons of diatoms, sp.gr. 0.24-0.34; light-colored; used as absorbent, in heat insulation; in polishing.

ingot iron. See iron, ingot.

inhibin. Factor which prevents bacterial growth.

inhibitols. Unidentified constituents of unsaponifiable matter of various vegetables and vegetable oils which delay oxidative rancidity in certain fats.

inhibitor. Any substance which slows down or prevents chemical reaction or corrosion.

initial boiling point. Temperature at which first drop of distillate falls from condenser to receiver in a standard laboratory distillation procedure.

injection molding. Molding process in which heat-softened plastic is forced into a mold where it cools until rigid, before removal.

-inium. Suffix designating cyclic substances ending with ine containing quinquevalent nitrogen in the ring, e.g. pyridinium.

ink. Colored fluid or greasy compound for writing, printing, etc.

ink, intaglio. Greaseless ink used to print from engraved copper or steel plates.

ink, planographic. An ink heavier and shorter than typographic ink (q.v.), used to print from plane surfaces as in lithographic and offset work.

ink, printing. Intimate mixture of pigment, oil, varnish and drier with or without grease or wax.

ink, sympathetic. See sympathetic ink.

ink, typographic. Special intimate mixture of soft pigment ground in heat bodied linseed oil varnish, drying chiefly by oxidation, used to print from raised surfaces.

inner complex compound. See chelate compound.

inner field (inner force). Electric field directly around any particular molecule in the interior of a polarized dielectric or the magnetic field around a molecule of a magnetised body.

inner field constant. Constant coefficient of electric polarization or of magnetisation in the linear function of the intensity of an inner field.

inner force. See inner field.

inorganic. Pertaining to substances not organic, non-living, i.e. which are not carbon compounds, with the possible exception of the oxides and sulfide of carbon.

inosite. See inositol.

i-inositol (1, 2, 3, 4, 5, 6-cyclohexanehexol; i-inosite; phaseomannitol; dambose). $C_6H_6(OH)_6$; m.w. 180.09; col. monocl. f.w.; m.p. anh. 225; i.al.

insane root. See henbane.

insect powder (pyrethrum powder). Powdered flower heads of pyrethrum species; used as an insecticide.

insecticide. Chemical substance which is poisonous to insects, e.g. phenols, creosotes, hydrocyanic acid, carbon disulfide, pyrethrum, etc.

inserts. Parts of a finished molded article which are of different material from the molding composition but are set in place or positioned by the molding operation.

insolation. Intensity of solar radiation on any point of the earth's surface, exposure to sun's rays.

inspissate. Thicken by heating or evaporation.

instantaneous center. Point at which the axis of a plane body moving in its own plane, at any instant, intersects that plane.

insulation. The prevention of flow of electrical current or the inhibition of flow of heat except in a desired direction by surrounding the conductor with a suitable non-conducting media.

insulation length, relative useful. Flash-over distance divided by height.

insulation resistance. The ratio of the voltage to the total current which flows between the electrodes imbedded in or attached to the solid or immersed in the liquid insulating material.

insulator. A device used in high voltage transmission for separating conductors from one another and from ground, made of porcelain or similar non-conductor.

insulin. A pancreatic hormone which facilitates the utilization and storage of glucose in the body, thus controlling its concentration in the blood, obtained in pure form from cattle and administered to diabetics, who suffer deficient pancreatic function.

insulin shock. Physiological effect due to sudden reduction of blood sugar to abnormally low levels upon administration of insulin, counteracted by administration of sugar.

Insurok. Synthetic tar-acid resin.

intact distillation. Vaporization of material from a mixture in which the heat source is in direct contact with the material to be vaporized.

integer. A whole number.

integer, positive. See positive integer.

integration. In calculus, the process of summation of infinitesimal parts, between two values, of a given function.

integration, continuous. Continuous summing up of a given quantity over a time interval.

intensity of radiation. Radiant energy emitted in a specified direction per unit time, per unit area of surface, per unit solid angle.

intensity, radiant. See radiant intensity.

inter-ester. Ester resulting from condensation reaction with loss of water between molecules.

intercalary. Placed between.

interface. The boundary surface between two phases.

interfacial angle. Dihedral angle between two adjacent faces of a crystal.

interfacial angle of contact. Angle between solid and interface of two immiscible liquids.

interfacial tension. See surface tension.

interkinesis. Resting stage which often occurs between end of first miotic division and beginning of the second.

intermediate. Coal tar product to be subjected to further chemical treatment to produce finished products such as dyes and pharmaceuticals.

internal conversion. Effect on an atom produced by a gamma-ray photon emerging from the nucleus and giving up its energy on meeting with an extranuclear electron.

internal potential. Average potential of free electrons inside a metal.

internal work. Work done by a system against internal forces or between its parts or upon the system by these forces.

International candle. See Bougie decimale.

interpolation. Computation of intermediate values of a quantity between a series of given values.

interstitial compound. Semi-metallic, usually hard, compounds formed by penetration of atoms of small diameter between the atoms of the transition metals; e.g. Fe_3C, Fe_2N, Fe_3N, Fe_4N.

interval factor (gamma value). Quantity referring to angular momentum levels in the Zeeman effect.

intra-ester. See inter-ester.

Intramine. The sodium salt of sulfonated lauryl and myristyl collamide used as a wetting and emulsifying agent and detergent in the textile and cosmetic industries.

intramolecular reaction. Change in position of an atom or group of atoms in a molecule giving rise to a different, though isomeric, compound.

intrinsic energy. The amount of energy associated with a compound.

intrinsic induction. See induction, intrinsic.

intrinsic potential. Constant difference in potential between the interior of a body and its surroundings.

intrinsic pressure. See pressure, intrinsic.

introfier. Substance used to lower interfacial tension between two phases; usually a liquid soluble in both phases; see penetrant.

intussusception. Process of repair of living cell by interposition of new material between existing molecules of protein.

inulin. $(C_6H_{10}O_5)_6 \cdot H_2O$; m.w. 990.48; col. hyg. cr.; m.p. 178d.

Invadine. A sodium alkyl-phenylene sulfonate used as a wetting agent.

Invadine B, C, N. Sodium alkyl naphthalene sulfonates used as wetting agents in bleaching carbonizing, neutral or acid baths.

invar. An alloy consisting of iron (63.8), nickel (36), carbon (0.2), having a low coefficient of expansion; sp.gr. 8.0; m.p. 1495° C.

invariable plane. Plane thru center of mass of a body or bodies perpendicular to rector representing its angular momentum.

invariant system. A system possessing no degrees of freedom.

inverse substitution. Replacement of halogen by hydrogen, e.g. $CHBr_3 + H_2O \rightarrow CH_3Br_2 + HBrO$.

inversion. Splitting up of higher sugars into molecules of a lower sugar.

inversion of emulsions. Change from a water-in-oil type to an oil-in-water type or vice versa.

inversion temperature. That temperature for any gas at which it is neither heated nor cooled by throttled expansion.

invert sugar. Mixture of equal parts of glucose and fructose produced by hydrolyzing sucrose, or cane sugar.

invertase. An enzyme which inverts cane-sugar, i.e. hydrolyzes it to a mixture of glucose and fructose.

involute. Curve formed by the end of a string while unwinding in a taut condition after it has been wound

around a cylinder at a certain point.

involution. Raising of a quantity to any power; self multiplication of a number, any number of times; return to type, a retrogradation.

iodargyrite. See iodyrite.

iodate. A salt of iodic acid (HIO_3).

iodembolite. Silver haloid; a greenish-yellow mineral.

iodeosin B. See erythrosin (dye).

iodic acid. HIO_3; m.w. 175.93; rhomb. col. or pa. yel. cr. powd.; s.g. 4.629°; m.p. 110; s.w.; s.al.

iodic acid, per-. HIO_4; m.w. 191.93; col.; s.w.

iodic acid, per- (hydrated). $HIO_4 \cdot 2H_2O$. m.w. 227.96; monocl. wh., deliq.; s.w.; s.al.

iodide. A salt of hydriodic acid (HI).

iodination. Process of introducing iodine into an organic compound.

iodine. I; at. wt. 126.92; rhomb. vlt.-blk., met. lust.; s.g. 4.93; m.w. 114; b.p. 183; s.al.

iodine azide (iodoazide). IN_3. m.w. 168.34; yel.

iodine bromide, mono-. IBr; m.w. 206.84; dk. gray. cr.; s.g. 4.4157°; b.p. 116; s.al.

iodine bromide, tri-. IBr_3. m.w. 366.67; dk. br. liq.; s.w.; s.al.

iodine chloride, mono-a. ICl; m.w. 162.38; cub. need. dk. red, oily red-br. liq.; s.g. 3.1822°; m.w. 27.2; b.p. 97.4; s.al.

iodine chloride, mono-β. ICl; m.w. 162.38; rhomb., 6-sided pl., brn.-red.; s.g. lq. 3.24 ^{34}; m.p. 13.92; b.p. 97.4; s.al.

iodine chloride, tri-. ICl_3. m.w. 233.29· rhomb., yel.-br. red, deliq.; s.g. 3.117 ^{15}; m.p. 101 ^{16atm}; s.al.

iodine cyanide. See cyanogen iodide.

iodine fluoride, hepta-. IF_7; m.w. 259.92; col. cr. or liq.; s.g. liq. 2.8 ^{6}; m.p. 5.5.

iodine fluoride, penta-. IF_5. m.w. 221.92; col. liq.; s.g. 3.5; m.p. −8; b.p. 97.

iodine number. Number of grams of iodine absorbed by 100 grams of a sample of fat or oil. A measure of the degree of unsaturation.

iodine oxide, di-. I_2O_5; m.w. 333.84; lem. yel. cr.; s.g. 4.2±; i.al.

iodine oxide, penta-. I_2O_5; m.w. 333.84; trim. wh.; s.g. 4.799 ^{25}; s.w.; s.al.

iodine sulfide, di-. I_2S_2. m.w. 317.96; brittle gray-black, met. lust.

iodine value. See iodine number.

iodite. See silver iodide.

iodoform (triiodomethane). CHI_3; m.w. 393.77; yel. hex.; m.p. 119.

iodoform, methyl-. See ethane 1, 1, 1-triiodo-.

d-iodogorgoic (d-3, 5-diiodotyrosine). $C_9H_9I_2NO_3$; m.w. 432.92; need.

dl-iodogorgoic acid (3, 5-dl-diiodotyrosine). $HOC_6H_2I_2CH_2CH(NH_2)$-COOH; m.w. 432.92; rect. pr.

iodol. See pyrrole, 2, 3, 4, 5-tetraiodo-.

iodonium iodide, diphenyl-. $(C_6H_5)_2I$; m.w. 407.92; yel. need. f.al.; m.p. 182; s.al.

iodophen. See phenolphthalein, 3′, 3′′, 5′, 5′′-tetraiodo-.

iodyrite (iodargyrite). A mineral, AgI; hex., pa. yel. or grn.; sp.gr. 5.60-5.707; hardness 1.

iolite. See cordierite.

ion. Atom or a group of atoms which has gained or lost electrons and carries an electrical charge.

ionamines. A class of azo dyestuffs.

ionic compound. See heteropolar compound.

ionic crystal. A crystal having chemical ions at its lattice points.

ionic micelle. Colloidal ion, with no appreciable osmotic activity, having the sum total of the electrical charges of the ions from which it was formed.

ionic potential. The value obtained, in Angstrom units, by dividing the valence of an ion by its radius.

ionic strength. Weighted concentration of ions computed by first multiplying the numbers of each sort of ions by the squares of their valencies before adding them together.

ionium. A radio-active disintegration product from uranium minerals; possibly elemental; at. wt. 230.5.

ionization. The formation of ions when an electrolyte is dissolved in water; the rendering of a gas or vapor a conductor of electricity by exposure to a radioactive source; the effect of dissociation or separation of the ions of a compound by a liquid of high dielectric constant, like water.

ionization coefficient. Number of ions produced by collisions of a rapidly moving corpuscle in a gas, per unit distance traveled.

ionization current. Current formed by an electric field in an ionized gas.

ionization potential. Tension in volts necessary to separate one electron from an atom with the formation of an ion with one elementary charge.

ionogenic. Ionizable.

α-ionone (4-[2, 6, 6-trimethyl-2-cyclohexenyl]-3-buten-2-one). $C_{13}H_{20}O$; m.w. 192.16; col. liq.; b.p. 147.5 ^{26}; s.w.; s.al.

β-ionone (4- 2, 6, 6-trimethyl-1-cyclohexenyl]-3-buten-2-one). $C_{13}H_{20}O$; m.w. 192.16; col. liq.; b.p. 140 ^{15}; s.w.; s.al.

α-ionone, semicarbazone. $C_{13}H_{20}$:NNHCONH$_2$; m.w. 249.20; col. cr. f. bs., lgr.; m.p. 110; s.al.

β-ionone, semicarbazone. $C_{13}H_{20}$:NNHCONH$_2$; m.w. 249.20; need. f.al.; m.p. 148; i.w.; s.al.

ionophilic. Ion attracting.

ionosphere (Kennelly-Heaviside layer; Heaviside layer). Level of upper atmosphere thought to be highly ionized and capable of reflecting radio waves, so that the latter travel parallel to the earth's surface.

ionotropy. The phenomenon of ion shifting.

ipecac. See ipecacuanha.

ipecacuanha (ipecac, cephaelis). Dried root of cephaelis; used as an emetic and expectorant, tanning agent.

iridium. Ir; at. wt. 193.1; cub., silv.-wh. met.; s.g. 22.421; m.p. 2440±15; b.p. 4400; i.w., a metallic element of the platinum family.

iridium ammonium chloride. $IrCl_4 \cdot 2NH_4Cl$; m.w. 441.92; dk. red.; s.g. 2.86.

iridium ammonium chloride. $IrCl_3 \cdot 3NH_4Cl$; m.w. 459.96; grn.-br.; s.w.

iridium ammonium sulfate. $Ir_2(SO_4)_3 \cdot (NH_4)_2SO_4 \cdot 24H_2O$; m.w. 1238.89; yel. red.; m.p. 106; s.w.

iridium bromide, tetra-. $IrBr_4$; m.w. 512.76; bl., deliq.; s.al.

iridium bromide, tri-. $IrBr_3 \cdot 4H_2O$; m.w. 504.91; olv. grn. cryst.; m.p. $-3H_2O$ 100; s.w.; i.al.

iridium chloride, di-. $IrCl_2$ (exist. doubt.); m.w. 264.01; blk.-grn. cryst.; s.w.

iridium chloride, tri-. $IrCl_3$. m.w. 299.47; olive grn.; s.g. 5.30; i.w.

iridium fluoride, hexa-. IrF_6; m.w. 307.10; yel. glass. or tetr., m.w. 6.0; m.p. 44.4; b.p. 53.

iridium hydroxide, sesqui-. $Ir_2O_3 \cdot 5H_2O$; m.w. 524.28; olive grn.; i.w.

iridium hydroxide, tetra-. $Ir(OH)_4$; m.w. 261.13; indigo bl.; m.p. $-2H_2O$ 350; i.w.

iridium iodide, tetra-. IrI_4; m.w. 700.78; blk.; i.w.; i.al.

iridium iodide, tri-. IrI_3; m.w. 573.86; grn; s.w.; s.al.

iridium oxide, di-. IrO_2. m.w. 225.10; tetr. blk.; i.w.

iridium oxide, sesqui-. Ir_2O_3 (exist. quest.); m.w. 434.20; bl.-blk.; m.p. −O 400; i.w.

iridium sulfate, sesqui-. $Ir_2(SO_4)_3 \cdot xH_2O$; m.w. 674.38 + xH_2O; yel. pr.; s.w.

iridium sulfide, di-. IrS_2; m.w. 257.22; br.; i.w.

iridium sulfide, hydro-. $Ir(SH)_3 \cdot 2H_2O$; m.w. 328.33; choc. br.; i.w.

iridium sulfide, mono-. IrS (exist. quest.); m.w. 225.16; bl. blk.: i.w.

iridium sulfide, sesqui-. Ir_2S_3; m.w. 482.38; br. blk.; s.w.

iridosmine (osmiridium). A very hard alloy of iridium and osmium; sp.gr. 18.8-21.12; resistant to corrosion; used for pen-points.

Irish moss. See moss, Irish.

iron (pure). Fe; at. wt. 55.84; cub. silv. metal; s.g. 7.86; m.p. 1535; b.p. 3000; i.w.; i.al., the most important and the cheapest of all metals, the main constituent of steels.

iron acetate(ous). $Fe(C_2H_3O_2)_2 \cdot 4H_2O$ m.w. 245.95; need.; s.w.

iron acetate, basic(ic). $FeOH(C_2H_3O_2)_2$ m.w. 190.89; br.-red powd.; i.w.; s.al.

iron acetate liquor (black liquor, iron liqueur). A 12% solution of ferrous acetate, used in calico printing and in dyeing as mordant, in the preparation of blue, violet, black, and brown colors; oxidizing on exposure to air to basic ferric acetate.

iron, alpha. Iron having a body-centered cubic lattice.

iron ammonium citrate(ic) (ammonioferric citrate). Red-br. scales; s.w.; i.al.

iron ammonium oxalate(ic). $(NH_4)_3Fe(C_2O_4)_3$; m.w. 373.96; monocl. grn. s.g. 1.78; m.p. d. 165; s.w.

iron ammonium sulfate(ic). $Fe(NH_4)(SO_4)_2 \cdot 12H_2O$. m.w. 482.19; cub. oct., vlt. effl.; s.g. 1.71; m.p. 230; b.p. $-12H_2O$, 230; s.w.; i.al.

iron ammonium sulfate(ous). $Fe(NH_4)_2(SO_4)_2 \cdot 6H_2O$; m.w. 392.13; monocl. grn.; s.g. 1.864; s.w.; i.al.

iron arsenate, monomethyl. $Fe_2(CH_3AsO_4)_3$; m.w. 525.54; redsh.-br. lust. scales; s.w.; i.al.

iron arsenate, ortho- (ic) (scorodite). $FeAsO_4 \cdot 4H_2O$. m.w. 266.83; rhomb. wh.; s.g. 3.18; i.w.

iron arsenate, ortho- (ous). $Fe_3(AsO_4)_2 \cdot 6H_2O$; m.w. 553.47; grn. amor. powd.; i.w.

iron arsenide. FeAs. m.w. 130.77; wh.; s.g. 7.83; m.p. 1020; s.w.

iron arsenide, di- (arsenoferrite). $FeAs_2$; m.w. 205.70; cub. silv. gray; s.g. 7.4; m.p. 990; i.w.

iron arsenite, basic(ic). $2FeAsO_3 \cdot Fe_2O_3 \cdot 5H_2O$; m.w 607.30; br.-yel. powd.; s.w.

iron arsenite, pyro- (ous). $Fe_2As_2O_5$; m.w. 341.54; grn.-wh.; i.w.

iron benzoate(ic). $Fe_3(C_7H_5O_2)_6$; m.w. 837.91; br. powd.; i.w.; s.al.

iron boride. FeB. m.w. 66.66; gray cryst.; s.g. 7.15 ^{15}; i.w.

iron bromide(ic). $FeBr_3$; m.w. 295.59; dk. red-br., deliq.; s.w.; s.al.

iron bromide(ic) (hydrated). $FeBr_3 \cdot 6H_2O$; m.w. 403.68; red; m.p. 27; s.w.

iron bromide(ous). $FeBr_2$. m.w. 215.67; hex. grn.-yel.; s.g. 4.636 ^{25}; s.w.; s.al.

iron cacodylate(ic). $Fe[(CH_3)_2AsO_2]_3$ m.w. 466.77; yelsh. amor. powd.; s.w.; s.al.

iron carbide. Fe_3C; m.w. 179.52; cub. gray; s.g. 7.4; m.p. 1837; i.w.

iron carbonate(ous) (siderite). $FeCO_3$; m.w. 115.84; trig. gray; s.g. 3.8.

iron carbonate(ous). $FeCO_3 \cdot H_2O$; m.w. 833.86; amor.; s.w.

iron carbonyl, penta-. $Fe(CO)_5$. m.w. 195.84; visc. yel. liq.; s.g. lq. 1.457; m.p. −21; b.p. 102.8 ^{760}; i.w.; s.al.

iron carbonyl, tetra-. $Fe(CO)_4$; m.w. 167.84; dk. grn. lust. cr.; s.g. 1.996 ^{18}; i.w.

iron chlorate, per-(ous). $Fe(ClO_4)_2 \cdot 6H_2O$; m.w. 362.85; grn.; s.w.; s.al.

iron chloride(ic) (molysite). $FeCl_3$; m.w. 162.21; hex. blk.-br.; s.g. 2.804 ^{11}; m.p. 282; b.p. 315; s.w.; s.al.

iron chloride(ic) (hydrated). $FeCl_3 \cdot 6H_2O$. m.w. 270.30; br.-yel. v. deliq. cr. mass; m.p. 37; b.p. 280-5; s.w.; s.al.

iron chloride(ous) (lawrencite). $FeCl_2$; m.w. 126.75; hex. grn. to yel., deliq.; s.g. 2.98; s.w.; s.al.

iron chloride(ous) (hydrated). $FeCl_2 \cdot 4H_2O$. m.w. 198.82; monocl. bl.-g deliq.; s.g. 1.93; s.w.; s.al.

iron chloride(ous, ic). $FeCl_3 \cdot 2FeC 18H_2O$; m.w. 775.46; yel., deliq.

iron chloroplatinate(ous). FePtC $6H_2O$; m.w. †571.91; yel. hex.; 2.714; s.w.

iron chromate(ic). $Fe_2(CrO_4)_3$; m 343.70; red-br. cryst.; i.w.; i.al.

iron chromate, di- (ic). $Fe_2(Cr_2O$ m.w. 759.74; red-br. gran.; s.w.

iron citrate(ic). $FeC_6H_5O_7 \cdot 3H_2O$; m 298.93; red-br. scales; s.w.; i.al.

iron ferricyanide(ous) (Turnbull's blu $Fe_3[Fe(CN)_6]_2$; m.w. 591.30; d bl.; i.w.; i.al.

iron ferricyanide(ous, ic) (Prus green). $Fe'''_4Fe''_3[Fe(CN)_6]_6$. m 1662.21; grn.; i.w.

iron ferrocyanide(ic) (Prussian blu $Fe_4[Fe(CN)_6]_3$; m.w. 859.02; dk. cryst.; i.w.; i.al.

iron ferrocyanide(ous). $Fe_2Fe(CN$ m.w. 323.57; amor. bl.-wh.; i.w.

iron fluoride(ic). FeF_3. m.w. 112.8 rhomb. grn.; s.g. 3.18; s.w.; i.al.

iron fluoride(ic) (hydrated). FeF $4\frac{1}{2}H_2O$; m.w. 193.91; yel. crys m.p. $-3H_2O$ 100; s.w.; i.al.

iron fluoride(ous). $FeF_2 \cdot 8H_2O$; m 237.96; grn.-bl.; s.g. 4.09 anh.; m $-8H_2O$ 100; s.w.; i.al.

iron fluosilicate(ic). $Fe_2(SiF_6)_3$; m 537.86; gel., flesh color; s.w.

iron fluosilicate(ous). $FeSiF_6 \cdot 6H_2$ m.w. 305.99; trig. col.; s.g. 1.961; s.

iron formate(ic). $Fe(CHO_2)_3 \cdot H_2O$; m 208.88; yel. cr.; s.w.

iron formate(ous). $Fe(CHO_2)_2 \cdot 2H$ m.w. 181.89; s.w.

iron glycerophosphate(ic). $Fe_2[C_3H$ $(OH)_3 \cdot OPO_3]_3$; m.w. 621.90; yels grn. scales or powd.; s.w.; i.al.

iron hydroxide(ic). $Fe(OH)_3$. m 106.86; red-br.; s.g. 3.4-3.9; m $-1\frac{1}{2}H_2O$ 500; i.w.; i.al.

iron hydroxide(ous). $Fe(OH)_2$. m 89.86; hex. pa. grn. or wh. amo s.g. 3.4.

iron, ingot. Open hearth or Besse mild steel, low in carbon.

iron iodide(ous). FeI_2. m.w. 309.6 hex. gray; m.p. 177; s.w.

iron iodide(ous) (hydrated). FeI $4H_2O$; m.w. 381.74; gray-blk. deliq.; s.g. 2.87; m.p. 177 anh.; s. s.al.

iron lactate(ic). $Fe(C_3H_5O_3)_3$; m 322.96; br. amor., deliq.; s.w.

iron lactate(ous). $Fe(C_3H_5O_3)_2 \cdot 3H$ m.w. 287.96; grn.-wh. cr. or pow s.w.; s.al.

iron liquer. See iron acetate liquor.

iron loss. See core loss.

iron malate(ic). $Fe(C_4H_4O_5)_3$; m 507.77; br. hyg. scales; s.w.; s.al.

iron nitrate(ic). $Fe(NO_3)_3 \cdot 6H_2O$. m 349.96; cub.; m.p. 35; s.w. $Fe(NO_3)_3 \cdot 9H_2O$; m.w. 404.00; mon col.-pa. vlt., deliq.; s.g. 1.684; r 47.2; s.w.; s.al.

iron nitrate(ous). $Fe(NO_3)_2 \cdot 6H_2O$; m 287.95; rhomb. grn.; s.w.

iron nitride. Fe_2N; m.w. 125.69; g s.g. 6.35; i.w.

iron oleate(ic). $Fe(C_{18}H_{33}O_2)_3$; m 899.61; br.-red fatty lumps; i.w.;

iron ore, brown. See limonite.

iron ore, titanic. See ilmenite.

iron oxalate(ic). $Fe_2(C_2O_4)_3$; m 375.68; amor.; m.p.d. 100; s.w.;

iron oxalate(ous). $FeC_2O_4 \cdot H_2O$; m 179.87; rhomb. pa. yel.; s.g. 2 m.p.d. 160; s.w.

iron oxide(ic) (hematite). Fe_2O_3; r 159.68; hex. red br. to blk.; 5.24; m.p. 1565; i.w.

iron oxide(ous). FeO; m.w. 71 blk.; s.g. 5.7; m.p. 1420; i.w.; i.e

iron oxide(ous, ic) (magnetite). Fe m.w. 231.52. cub. blk.; red-blk. po s.g. 5.18; i.w.; i.al.

iron oxide(ous, ic). $Fe_3O_4 \cdot 4H_2O$. r 303.58; blk.; i.w.

iron oxide, brown. See iron oxide

iron oxide, red. 96-98% ferric o the rest being $CaSO_4$; dark red cry

powder; sp.gr. 5.12-24; m.p. 5; used in manufacture of mineral ors, theatrical rouge, polishing parations, as a catalyst, pigment, l in medicine.

xide, yellow. Fe_2O_3(78-85), $CaSO_4$· 12), combined water (12); a pig- nt.

phosphate(ous) (vivianite). $_3(PO_4)_2 \cdot 8H_2O$; m.w. 501.68; monocl. -bl.; s.g. 2.58; i.w.

phosphate, glycero-. See iron ycero phosphate(ic).

phosphate, ortho-(ic). $FePO_4 \cdot H_2O$. m.w. 186.89; yel. wh., dimorph.; . 2.87; s.w.

phosphate, pyro-(ic). $Fe_4(P_2O_7)_3 \cdot H_2O$; m.w. 907.62; yel.-wh. powd.; v.

phosphide(ic). Fe_3P. m.w. 198.54; ay; s.g. 6.74; m.p. 1100; i.w.

phosphide(ous). Fe_2P. m.w. 142.70; -gray cr. or powd.; s.g. 6.56; m.p. 290; i.w.

phosphite, hypo-(ic). $Fe(H_2PO_2)_3$; .w. 250.95; wh. or gray-wh. powd.

platinate, chloro-. See iron chloro- latinate.

potassium oxalate(ic). $K_3Fe(C_2O_4)_3 \cdot 3H_2O$; m.w. 491.19; monocl. rn. s.w.; s.al.

potassium oxalate(ous). $K_2Fe(C_2O_4)_2 \cdot 2H_2O$; m.w. 346.07; gold eed.; s.w.

potassium sulfate(ic). $FeK(SO_4)_2 \cdot 2H_2O$; m.w. 503.25; cub. oct. col. r vlt.; s.g. 1.83; m.p. 33; s.w.; i.al.

pyrites. See pyrite.

n, reduced (ferrum reductum). A ine gray granular iron powder made by reducing ferric oxide with dry ydrogen; used in medicine and rganic synthesis.

rubidium selenate(ic). $Fe_2(SeO_4)_3 \cdot Rb_2SeO_4 \cdot 24H_2O$; m.w. 1287.73; cub.; s.g. 2.131 [15]; m.p. 45.

n scurf. A blue brick glazing ma- terial.

sodium oxalate(ic). $2Na_3Fe(C_2O_4)_3 \cdot 9H_2O$; m.w. 939.80; grn. cr. s.w.

spinel. See hercynite.

sulfate(ic). $Fe_2(SO_4)_3$. m.w. 399.86; rhomb. yel.; s.g. 3.097 [18]; s.w.

sulfate(ic) (coquimbite). $Fe_2(SO_4)_3 \cdot 9H_2O$; m.w. 562.00; rhomb., deliq.; s.g. 2.1; s.w.

sulfate(ous) (melanterite). $FeSO_4 \cdot 7H_2O$; monocl. bl.-grn.; s.g. 1.898; m.p. 64, $-6H_2O$, 100; b.p. $-7H_2O$, 300; s.w.; i.al.

sulfide(ic). Fe_2S_3; m.w. 207.86; yel., grn.; s.g. 4.3.

sulfide(ous) (triolite). FeS; 87.90; hex. blk.-br.; s.g. 4.84; m.p. 1193.

sulfide(ous, ic). Fe_3S_4; m.w. 295.76; hex.; s.g. 4.55; i.w.

sulfide, di- (marcasite). FeS_2; m.w. 119.96; rhomb. yel.; s.g. 4.87.

sulfide, di- (pyrite). FeS_2; m.w. 119.96; cub. yel.; s.g. 5.00; m.p. 1171.

sulfite(ous). $FeSO_3 \cdot 2\frac{1}{2}H_2O$; m.w. 180.94; s.w.; i.al.

tantalate(ic). $Fe_2(TaO_4)_3$. m.w. 847.88; gray-br. powd.; i.w.

tartrate(ic). $Fe_2(C_4H_4O_6)_3 \cdot H_2O$ m.w. 573.79; redsh.-br. scales; s.w.

tartrate(ous). $FeC_4H_4O_6$; m.w. 203.87; cryst.; s.w.

thiocyanate(ic). $Fe(CNS)_3 \cdot 3H_2O$; m.w. 284.09; cub. blk.-red, deliq.; s.w.; s.al.

thiocyanate(ous). $Fe(CNS)_2 \cdot 3H_2O$; m.w. 226.02; rhomb. grn.; s.w.; s.al.

thiosulfate(ous). $FeS_2O_3 \cdot 5H_2O$; m.w. 258.04; grn. cr. deliq.; s.w.; s.al.

vanadate(ic). $FeVO_3$; m.w. 154.79; grayish-br. powd.; i.w.; i.al.

iron, wrought. See wrought iron.

irone (natural irone; 4-[2, 2, 6-trimethyl-3-cyclohexenyl]-3-buten-2-one). $C_{13}H_{20}O$; m.w. 192.16; . col. liq.; b.p. 114 [15]; s.w.; s.al.

irradiation. Radiant energy per unit of intercepting area.

irrational. In mathematics, not being expressible by an integral or a fractional number, e.g. $\sqrt{2}$, π, e.

irreversible process. A process in which an infinitesimal alteration in the conditions causes a spontaneous and complete change in equilibrium.

irris. See orris root.

isatic acid (o-aminophenylglyoxylic acid; o-aminobenzoylformic acid; isatinic acid). $NH_2C_6H_4COCOOH$; m.w. 165.06; wh. powd.; s.w.

isatic acid, lactam. See isatin.

isatin (2, 3-indolinedione; isatic acid lactam). $C_6H_4NHCOCO$; m.w. 147.05.

red monocl. need. f.al.; m.p. 201; s.w. s.al.

isatin, acetyl-. See pseudoisatin, 1-acetyl-.

isatin chloride (2-chloro-3-pseudoindolone). $C_6H_4N:CClCO$; m.w. 165.50;

br. need.; i.w.; s.al.

isatin, 1-methyl- (N-methylisatin). $C_6H_4N(CH_3)COCO$; m.w. 161.06; red.

need.; m.p. 134.

isatin, 5-methyl- (p-methylisatin). $CH_3C_6H_3NHCOCO$, m.w. 161.06; red.

leaf. f.w.; m.p. 187; s.w.; s.al.

isatin, nitro-. $C_6H_3(NO_2)NHCOCO$;

m.w. 192.05; need. f.al.; m.p. 230; s.w.; s.al.

isatin, thio-. See thionaphthenequinone.

isatoic anhydride (N-carboxyanthranilic acid anhydride). $C_6H_4COOCONH$;

m.w. 163.05; monocl. f. acet.

isatoxime. See indoxyl, 1-nitroso-.

α-isatropic acid (1, 2, 3, 4-tetrahydro-1-phenyl-1, 4-naphthalenedicarboxylic acid [one form]). $C_{18}H_{16}O_4$; m.w. 296.12; cr.; m.p. 237; s.w.; s.al.

isentropic. Without change of entropy.

isethionic acid (2-hydroxyethanesulfonic acid). $CH_2OHCH_2SO_3H$; m.w. 126.11; s.w.; i.al.

isinglass (ichthyocoll). A form of gelatin made from the internal membranes of the fish bladder; used as an adhesive and clarifyer.

iso-. A prefix signifying equal or identical; e.g. isomeric, isotopes.

iso compounds. Compounds which have the same chemical composition but which have a different arrangement of their atoms, e.g. butane and isobutane.

isoamyl acetate. See acetic acid, isoamyl ester.

isoamyl alcohol (isobutylcarbinol; 3-methyl-1-butanol). $(CH_3)_2CHCH_2CH_2OH$; m.w. 88.09; col. liq.; m.p. -117.2; b.p. 130.5; s.al.

sec-isoamyl alcohol. See 2-butanol, 3-methyl-.

isoamyl aldehyde. See isovaleraldehyde.

isoamylamine (1-amino-3-methylbutane). $(CH_3)_2CHCH_2CH_2NH_2$; m.w. 87.11; col. liq.; b.p. 95; s.w.; s.al.

isoamyl borate (triisoamyl borate). $B(OC_5H_{11})_3$; m.w. 272.08; col. liq.; b.p. 255; s.al.

isoamyl bromide (1-bromo-3-methylbutane). $(CH_3)_2CHCH_2CH_2Br$; m.w. 151.00; col. liq.; m.p. -111.9; b.p. 120.65; s.al.

isoamyl butyrate. See butyric acid, isoamyl ester.

isoamyl chloride (1-chloro-3-methylbutane). $(CH_3)_2CHCH_2CH_2Cl$; m.w. 106.54; col. liq.; b.p. 98.9; i.w.; s.al.

isoamyl cyanide. See isocapronitrile.

isoamyl disulfide (diisoamyl disulfide). $C_5H_{11}S_2C_5H_{11}$; m.w 206.29; liq.; b.p. 250.

α-isoamylene. See 1-butene, 3-methyl-.

β-isoamylene. See 2-butene, 3-methyl-.

α-isoamylene glycol. See 1, 2-butanediol, 3-methyl-

β-isoamylene glycol. See 2, 3-butanediol, 2-methyl-.

γ-isoamylene glycol. See 1, 3-butanediol, 3-methyl-.

isoamyl ether (3-methyl-1-[γ-methylbutoxy] butane; diisoamyl ether). $(CH_3)_2CH(CH_2)_2O(CH_2)_2CH(CH_3)_2$; m.w. 158.17; col. liq.; b.p. 172.5-3.0; i.w.; s.al.

isoamyl formate. See formic acid, isoamyl ester.

isoamyl iodide (1-iodo-3-methylbutane). $(CH_3)_2CHCH_2CH_2I$; m.w. 198.01; col. liq.; b.p. 148; i.w.; s.al.

isoamyl isocyanide (γmethylbutyl isocyanide; isoamylcarbylamine). $(CH_3)_2CH(CH_2)_2NC$; m.w. 97.09; liq.; b.p. 137; i.w.; s.al.

isoamyl mercaptan. See 1-butanethiol, 3-methyl-.

isoamyl nitrate (γ-methylbutyl nitrate). $(CH_3)_2CHCH_2CH_2ONO_2$; m.w. 133.09; col. liq.; b.p. 148; s.w.; s.al.

isoamyl nitrite (γ-methylbutyl nitrite). $(CH_3)_2CHCH_2CH_2ONO$; m.w. 117.09; ylsh. inflam. liq.; b.p. 99; s.w.; s.al.; used in manufacture of perfumes, diazonium salts, and in medicine.

isoamyl sulfate (diisoamyl sulfate). $[(CH_3)_2CH_2CH_2CH_2]_2SO_4$; m.w. 240.25; b.p. 149-51 [13].

isoamyl sulfide (diisoamyl sulfide; 3-methyl-1-[γ-methylbutylthio]-butane). $[(CH_3)_2CH(CH_2)_2]_2S$; m.w. 174.23; col. liq.; b.p. 209-11; i.w.; s.al.

isoamyl urethan. See carbamic acid, isoamyl ester.

isoanthraflavic acid (2, 7-dihydroxyanthraquinone). $HOC_6H_3(CO)_2C_6H_3OH$; m.w. 240.06; lng. yel. need. f.dil.al.; s.al.

isobar. Imaginary line drawn thru points on a map having the same atmospheric pressures, the most important feature of the daily weather map.

isobares. Elements of same atomic weight, but different atomic numbers and hence different chemical properties.

isobenzamarone (α, α'-benzaldisdesoxybenzoin; 1, 2, 3, 4, 5-pentaphenyl-1, 5-pentanedione [one form]). $C_6H_5CH[CH(C_6H_5)COC_6H_5]_2$; m.w. 480.22; cr.; m.p. 179-80.

1 (3)-isobenzofuranone. See phthalide.

isobornyl chloride (2-chlorocamphane [one form]; camphene hydrochloride; bornyl chloride [incorrect]). $C_{10}H_{17}Cl$; m.w. 172.59; col. feath. cr.; m.p. 148-50; i.w.; s.al.

isobutane (2-methylpropane; trimethylmethane). $(CH_3)_3CH$; m.w. 58.08; col. gas; m.p. -145; b.p. -10.2; s.w.; s.al.

isobutyl acetate. See acetic acid, isobutyl ester.

isobutyl alcohol (2-methyl-1-propanol; isopropylcarbinol). $(CH_3)_2CHCH_2OH$; m.w. 74.08; col. inflam. liq.; m.p. -108; b.p. 108.39; s.w.; s.al.

isobutyl aldehyde. See isobutyraldehyde.

isobutylamine (1-amino-2-methylpropane). $(CH_3)_2CHCH_2NH_2$; m.w. 73.09; col. liq.; m.p. -85.5; b.p. 68; s.w.; s.al.

isobutylamine, N-methyl-. $CH_3NHCH_2CH(CH_3)_2$; m.w. 87.11; col. liq.; b.p. 76-8.

isobutyl arsenite (triisobutyl [ortho] arsenite). $As[OCH_2CH(CH_3)_2]_3$; m.w. 294.14; b.p. 242.

isobutyl benzoate. See benzoic acid, isobutyl-.

isobutyl borate (triisobutyl borate). $B(OC_4H_9)_3$; m.w. 230.03; col. liq.; b.p. 212; s.al.

isobutyl bromide (1-bromo-2-methylpropane). $(CH_3)_2CHCH_2Br$; m.w. 136.99; col. liq.; m.p. -118.5; b.p. 91.5; s.al.

isobutyl chloride (1-chloro-2-methylpropane). $(CH_3)_2CHCH_2Cl$; m.w. 92.53; col. liq.; m.p. -131.2.; b.p. 68.9; s.al.

isobutyl cyanide. See isovaleronitrile.

isobutylene. See propene, 2-methyl-.

isobutylene glycol. See 1, 2-propanediol, 2-methyl-.

isobutylene oxide. See ethylene oxide, α, α-dimethyl-.

isobutyl ether (2-methyl-1-[β-methylpropoxy] propane; diisobutyl ether). $[(CH_3)_2CHCH_2]_2O$; m.w. 130.14; col. liq.; b.p. 122.5; s.w.; s.al.

isobutyl fluoride (1-fluoro-2-methylpropane). $(CH_3)_2CHCH_2F$; m.w. 76.07; gas.; b.p. 16.

isobutylformic acid. See isovaleric acid.

isobutylidene bromide. See propane-1, 1-dibromo-2-methyl-.

isobutyl iodide. (1-iodo-2-methylpropane). $(CH_3)_2CHCH_2I$; m.w. 183.99; col. liq.; m.p. -93.5; b.p. 120.4; i.w.; s.al.

isobutyl isocyanide (β-methylpropylcarbylamine). $(CH_3)_2CHCH_2NC$; m.w. 83.08; col. liq.; m.p. <-60; b.p. 114-7; s.w.; s.al.

isobutyl mercaptan. See 1-propanethiol, 2-methyl-.

isobutyl mustard oil. See isothiocyanic acid, isobutyl ester.

isobutyl nitrate (β-methylpropyl nitrate). $(CH_3)_2CHCH_2ONO_2$; m.w. 119.08; col. liq.; b.p. 122.9; i.w.; s.al.

isobutyl nitrite (β-methylpropyl nitrite). $(CH_3)_2CHCH_2ONO$; m.w. 103.08; liq.; b.p. 67; i.w.; s.al.

isobutyl sulfate (diisobutyl sulfate). $[(CH_3)_2CHCH_2]_2SO_4$; m.w. 210.20; b.p. 133-4 [19].

isobutyl sulfide (diisobutyl sulfide; 2-methyl-1-[β-methylpropylthio] propane). $[(CH_3)_2CHCH_2]_2S$; m.w. 146.20; col. liq.; b.p. 172-3; i.w.; s.al.

isobutyraldehyde (2-methylpropanal; isobutyl aldehyde). $(CH_3)_2CHCHO$; m.w. 72.06; col. liq.; m.p. -65.9; b.p. 61; s.w.; s.al.

isobutyraldehyde, oxime (2-methylpropanal oxime; isobutyraldoxime). $(CH_3)_2CHCH:NOH$; m.w. 87.08; col. oil; m.p. <-80; b.p. 139; s.w.

isobutyraldoxime. See isobutyraldehyde, oxime.

isobutyramide (2-methylpropanamide; isobutyric amide). $(CH_3)_2CHCONH_2$; m.w. 87.08; col. monocl. f.bz. or chl.; m.p. 129; b.p. 220; s.w.; s.al.

isobutyric acid (2-methylpropanoic acid; dimethylacetic acid; α-methylpropionic acid). $(CH_3)_2CHCOOH$; m.w. 88.06; col. liq.; m.p. -47.0; b.p. 154.4; s.w.; s.al.

isobutyric acid, allyl ester (allyl isobutyrate; 2-propenyl 2-methylpropanoate). $(CH_3)_2CHCOOC_3H_5$; m.w. 128.09; liq.; b.p. 133.5; s.w.; s.al.

isobutyric acid, α-amino- (2-amino-2-methyl-propanoic acid). $(CH_3)_2C(NH_2)COOH$; m.w. 103.08; col. monocl. pl. or pr.; s.w.; s.al.

isobutyric acid, amyl ester (pentyl 2-methylpropanoate). $(CH_3)_2CHCOO(CH_2)_4CH_3$; m.w. 158.14; liq.; b.p. 155; s.w.; s.al.

isobutyric acid, α-bromo, ethyl ester (ethyl 2-bromo-2-methylpropanoate). $(CH_3)_2CBrCOOC_2H_5$; m.w. 195.00; col. liq.; i.w.; s.al.

isobutyric acid, α-bromo- (2-bromo-2-methylpropanoic acid). $(CH_3)_2CBrCOOH$; m.w. 166.97; pl.; m.p. 48; b.p. 198-200; s.w.; s.al.

isobutyric acid, ethyl ester (ethyl isobutyrate; ethyl 2-methyl-propanoate). $(CH_3)_2CHCOOC_2H_5$; m.w. 116.09; col. liq.; m.p. -88.2; b.p. 111.7; s.w.; s.al.

isobutyric acid, α-hydroxy- (2-hydroxy-2-methylpropanoic acid; acetonic acid). $(CH_3)_2COHCOOH$; m.w. 104.06; col. hyg. pr. f. bz.; m.p. 79; b.p. 212; s.w.; s.al.

isobutyric acid, isoamyl ester (γ-methylbutyl 2-methylpropanoate). $(CH_3)_2CHCOOC_5H_{11}$; m.w. 158.14; col. liq.; b.p. 168.8; s.w.; s.al.

isobutyric acid, isobutyl ester (β-methylpropyl 2-methylpropanoate). $(CH_3)_2CHCOOCH_2CH(CH_3)_2$; m.w. 144.12; col. liq.; m.p. -80.7; b.p. 148.7; s.w.; s.al.

isobutyric acid, isopropyl ester. $(CH_3)_2CHCOOCH(CH_3)_2$; m.w. 130.11; col. liq.; b.p. 120.8; i.w.; s.al.

isobutyric acid, α-methoxy-, 3-p-menthyl ester (menthol α-methoxyisobutyrate).

$(CH_3)_2C(OCH_3)COOH$ $_{10}H_{19}$; m.w. 256.22; liq.; b.p. 124-6 ^{10}; s.al.

isobutyric acid, methyl ester (methyl 2-methylpropanoate; methyl isobutyrate). $(CH_3)_2CHCOOCH_3$; m.w. 102.08; col. liq.; m.p. −84.7; b.p. 92.6; s.w.; s.al.

isobutyric acid, piperazinium salt. $C_4H_{10}N_2 \cdot 2C_3H_7COOH$; m.w. 262.22; wh. cr.; m.p. 121-2; s.w.; s.al.

isobutyric acid, propyl ester (n-propyl isobutyrate). $(CH_3)_2CHCOOC_3H_7$; m.w. 130.11; col. liq.; b.p. 135.4; s.w.

isobutyric amide. See isobutyramide.

isobutyric anhydride. $[(CH_3)_2CHCO]_2O$; m.w. 158.11; col. liq.; m.p. −53.5; b.p. 182.5.

isobutyronitrile (2-methylpropanenitrile; isopropyl cyanide). $(CH_3)_2CHCN$; m.w. 69.06; col. liq.; b.p. 107-8; s.w.; s.al.

isobutyronitrile, α-hydroxy- (2-hydroxy-2-methylpropanenitrile; acetone cyanohydrin). $(CH_3)_2C(OH)CN$; m.w. 85.06; col. liq.; m.p. −19; b.p. 120; s.w.; s.al.

isobutyrophenone (isopropyl phenyl ketone). $(CH_3)_2CHCOC_6H_5$; m.w. 148.09; col. liq.; b.p. 217; i.w.; s.al.

isobutyrophenone, α-bromo-2, 4, 6-trimethyl- (α-bromoisopropyl 2-mesityl ketone; α-bromoisobutyrylmesitylene). $(CH_3)_2CBrCOC_6H_2(CH_3)_3$; m.w. 269.05; cr.; m.p. 27; b.p. 160-70 ^{24}.

isobutyryl bromide (2-methylpropanoyl bromide). $(CH_3)_2CHCOBr$; m.w. 150.97; b.p. 116-8.

isobutyryl chloride (2-methylpropanoyl chloride). $(CH_3)_2CHOCl$; m.w. 106.51; col. liq.; m.p. −90.0; b.p. 92.

isocalycanthine. $C_{11}H_{14}N_2 \cdot \frac{1}{2}H_2O$; m.w. 183.13; rhomb.; m.p. 235; s.al.

isocamphane (2, 2, 3-trimethylnorcamphane; isohydrocamphene; 2, 2, 3-trimethylbicyclo-[2, 2, 1] heptane). $C_{10}H_{18}$; m.w. 138.14; m.p. 64.5; b.p. 164.

dl-isocamphoric acid (dl-trans-1, 2, 2-trimethyl-1, 3-cyclopentanedicarboxylic acid). $C_8H_{14}(COOH)_2$; m.w. 200.12; cr.; m.p. 191; s.al.

isocapric alcohol. See 1-hexanol, 3-isopropyl-5-methyl-.

isocaproic acid (4-methylpentanoic acid; isobutylacetic acid). $(CH_3)_2CH(CH_2)_2COOH$; m.w. 116.09; col. oily liq.; m.p. −35; b.p. 207.7; s.wt; s.al.

isocaproic acid, α-amino-. See leucine.

isocaproic acid, α-hydroxy-. See leucic acid.

isocaprone. See 5-nonanone, 2, 8-dimethyl-.

isocapronitrile (4-methylpentanenitrile; isoamyl cyanide; isobutylacetonitrile). $(CH_3)_2CH(CH_2)_2CN$; m.w. 97.09; col. liq.; m.p. −51.1; b.p. 155.5; i.w.; s.al.

isocaprophenone (isoamyl phenyl ketone). $(CH_3)_2CH(CH_2)_2COC_6H_5$; m.w. 176.12; col. liq.; m.p. 24.7; b.p. 242.5; i.w.; s.al.

isocaprylic acid, α-hydroxy- (2-hydroxy-6-methylheptanoic acid). $(CH_3)_2CH(CH_2)_3CHOHCOOH$; m.w. 160.12; need. f.et.; s.w.; s.al.

isocarbostyril (1-isoquinolinol or 1 [2]-isoquinolone). C_9H_7NO; m.w. 145.06; col. monocl. f. bz.; m.p. 208-9; s.w.; s.al.

isocholesterol (isocholesterin). $C_{27}H_{45}OH$; m.w. 386.36; need. f.et.; m.p. 138; s.al.

isocholesterol, benzoate. $C_6H_5COOC_{27}H_{45}$; m.w. 490.39; need.; m.p. 191-5; s.al.

isochor (isochore). Graph showing two variables in an isometric change; a line on a thermodynamic diagram showing how the pressure of a constant volume of gas varies with the temperature.

isochromatic. Referring to any change of radiation factors in which the frequency or wave length remains constant. See also orthochromatic.

isochronous. Having a period independent of amplitude.

isochrysene. See triphenylene.

isocinchoheronic acid (2, 5-pyridinedicarboxylic acid). $C_5H_3N(COOH)_2 \cdot H_2O$; m.w. 185.06; col. leaf. f.w.; m.p. 236-7 (anh.); s.w.; s.al.

isocinnamic acid (of Liebermann) (cis-β-phenylacrylic acid [one form]; cis-benzenepropenoic acid [one form]). $C_6H_5CH:CHCOOH$; m.w. 148.06; lng. monocl. pr.f.lgr.; m.p. 58; b.p. 265; s.al.

isocitric acid (1-hydroxy-1, 2, 3-propanetricarboxylic acid; α-hydroxytricarballylic acid). $COOHCH(OH)CH(COOH)CH_2COOH$; m.w. 192.06; pr.; s.w.; s.al.

isoclinal. In geology, descriptive of folds essentially parallel. See also isoclinic line.

isoclinic line (isoclinal). Line of points on earth's surface having the same magnetic inclination.

isocodeine. $C_{18}H_{21}NO_3$; m.w. 299.17; m.p. 144.

isocolloid. Polyphase system in which disperse component is chemically identical with the dispersion medium but differs in molecular aggregation.

isocorybulbine. $C_{21}H_{25}NO_4$; m.w. 355.20; col. leaf.; m.p. 180; i.w.; s.al.

isocorydaline. $C_{22}H_{27}NO_4$; m.w. 369.22; m.p. 136.

isocosm. Line connecting points of same cosmic-ray intensity on earth's surface.

isocotoin (2, 4-dihydroxy-6-methoxybenzophenone). $C_{14}H_{12}O_4$; m.w. 244.09; m.p. 162.

isocoumarin (2, 1-benzopyrone; o-β-hydroxyvinylbenzoic acid lactone). $C_6H_4COOCH:CH$; m.w. 146.05; pl.f.bz.; m.p. 47; b.p. 286; i.w.; s.al.

isocrotonic acid (cis[?]-2-butenoic acid; β-[or liquid] crotonic acid; allocrotonic acid; cis[?]-β-methylacrylic acid; quartenylic acid). $CH_3CH:CHCOOH$; m.w. 86.05; col. need. f. pet. eth.; m.p. 14-5; s.w.; s.al.

isocrotonic acid, α-methyl. See angelic acid.

isocrotyl chloride. $(CH_3)_2C{\cdot}CHHCl$; m.w. 90.52; b.p. 68.1; sp.gr. 0.919; used in chemical synthesis.

isocyanic acid, ethyl ester. C_2H_5NCO; m.w. 71.05; liq.; b.p. 60; i.w.; s.al.

isocyanic acid, phenyl ester (phenyl isocyanate; phenylcarbonimide; carbanil). $C_6H_5N:CO$; m.w. 119.05; liq.; b.p. 165.6.

isocyanic acid, o-tolyl ester (o-tolylcarbonimide). $CH_3C_6H_4NCO$; m.w. 133.06; liq.; b.p. 186.

isocyanide. See carbylamine.

isocyanuric acid. See fulminuric acid.

isocyanuric acid, trimethyl ester (tricarbonimide trimethyl ester). $C_3O_3(NCH_3)_3$; m.w. 171.09; pr.; m.p. 175; b.p. 295.

isocyclic. See homocyclic.

isocymene. See m-cymene.

isoderritol. $C_{21}H_{20}O_6$; m.w. 352.16; m.p. 149.

isodextrosamine. See d-fructosamine.

isodibutol. See 2-pentanol, 2, 4, 4-trimethyl-.

isodurene (1, 2, 3, 5-tetramethylbenzene). $(CH_3)_4C_6H_2$; m.w. 134.11; liq.; m.p. −24; b.p. 197; i.w.; s.al.

isodurene, 4-amino-. See isoduridine.

isodurenol (2, 3, 4, 6-tetramethylphenol [?]; 4-hydroxyisodurene [?]). $(CH_3)_4C_6HOH$; m.w. 150.11; cr.; m.p. 79-81; b.p. 230-50; s.al.

isoduridine (2, 3, 4, 6-tetramethylaniline; 4-aminoisodurene). $(CH_3)_4C_6HNH_2$; m.w. 149.13; cr.; m.p. 23-4; b.p. 255; s.al.

α-isodurylic acid (3, 4, 5-trimethylbenzoic acid). $(CH_3)_3C_6H_2COOH$; m.w. 164.09; need. f.w.; m.p. 215; s.w.; s.al.

β-isodurylic acid (2, 4, 6-trimethylbenzoic acid; mesitylene-eso-carboxylic acid). $(CH_3)_3C_6H_2COOH$; m.w. 164.09; col. cr.f.al.; m.p. 152; s.w.; s.al.

γ-isodurylic acid (2, 3, 5-trimethylbenzoic acid). $(CH_3)_3C_6H_2COOH$; m.w. 164.09; pl.f.lgr.; m.p. 127; s.al.

isodynamic line. Line connecting points on earth's surface of same total terrestrial magnetic intensity.

isoelectric. Electrically neutral.

isoelectric point. Definite pH value at which no migration of ions occurs in an amphoteric electrolyte.

isoelectronic. Having the same number of electrons outside the nucleus.

isoenergic. A state conditioned on internal energy remaining constant.

isoephedrine. See pseudoephedrine.

isoerucic acid. See brassidic acid.

isoeugenol (4-propenylguaiacol). $CH_3CH:CHC_6H_3(OCH_3)OH$; m.w. 164.09; pa. yel. liq.; m.p. −10; b.p. 267.5; s.w.; s.al.

isoeugenol, acetate. $CH_3CH:CHC_6H_3(OCH_3)OOCCH_3$; m.w. 206.11; need. f.bz.; m.p. 79-80; b.p. 282-3; i.w.

isoeugenol, benzyl ether (1-benzyloxy-2-methoxy-4-propenylbenzene). $CH_3CH:CHC_6H_3(OCH_3)OC_7H_7$; m.w. 254.14; need. f.al.; m.p. 58-9; i.w.; s.al.

isoeugenol, ethyl ether (1-ethoxy-2-methoxy-4-propenylbenzene). $CH_3CH:CHC_6H_3(OCH_3)OC_2H_5$; m.w. 192.12; cr.f.dil. al.; m.p. 64; i.w.; s.al.

isoeugenol, γ-hydroxy-. See coniferyl alcohol.

isoeugenol, methyl ester. See veratrole, 4-propenyl-.

l-isofenchyl alcohol (l-6-fenchanol). $C_{10}H_{17}OH$; m.w. 154.14; need.; m.p. 62; b.p. 204; i.w.; s.al.

isoferulic acid (3-hydroxy-4-methoxycinnamic acid; hesperetic acid). $HO(CH_3O)C_6H_3CH:CHCOOH$; m.w. 194.08; wh. need.; m.p. 228; s.w.; s.al.

isogam. Line connecting points, on earth's surface, of equal acceleration of gravity.

isogamy. Sexual union of two gametes of equal size.

isoglucosamine. See d-fructosamine.

isogonic. Forming or referring to a fixed angle.

isograph. Calculating machine for solution of problems of complex polynomials of as high as the 10th degree.

α, β-isoheptenic acid. See 2-hexenoic acid, 5-methyl-.

isoheptyl alcohol. See 1-hexanol, 5-methyl-.

isoheptylic acid. See caproic acid, 5-methyl-.

isohexacosane. See cerane.

α-isohexenic acid. See 2-pentenoic acid, 4-methyl-.

isohexylamine ([4-methylamyl] amine; 1-amino-4-methylpentane). $(CH_3)_2CH(CH_2)_3NH_2$; m.w. 101.13; wh.-yel. liq.; m.p. −94.4; b.p. 123.9; s.w.; s.al.

isohydrobenzoin (1, 2-diphenyl-1, 2-ethanediol [one form]). $C_{14}H_{12}(OH)_2$; m.w. 214.11; col. monocl. f.al.; m.p. 121; b.p. 133 $^{0.05}$; s.al.

isohydrocamphene. See isocamphane.

1, 3-isoindoledione. See phthalimide.

1-isoindolinone. See phthalimidine.

isolates, natural. Chemically pure substances derived from essential oils.

d-isoleucine (d-2-amino-3-methyl-pentanoic acid; d-α-amino-β-methylvaleric acid). $CH_3CH_2CH(CH_3)CH(NH_2)COOH$; m.w. 131.11; greasy rhomb. leaf. f.al.; s.al.

dl-isoleucine (dl-α-amino-β-methylvaleric acid; dl-2-amino-3-methylpentanoic acid); $CH_3CH_2CH(CH_3)CH(NH_2)COOH$; m.w. 131.11; rhomb. or monocl. pl.f.dil. al.; s.al.

d-allo-isoleucine (d-allo-α-amino-β-methylvaleric acid). $CH_3CH_2CH(CH_3)CH(NH_2)COOH$; m.w. 131.11; greasy leaf.

l-allo-isoleucine (l-allo-α-amino-β-methylvaleric acid). $CH_3CH_2CH(CH_3)CH(NH_2)COOH$; m.w. 131.11; greasy leaf.

Isoline. Synthetic drying oil consisting of triglycerides of isomeric linoleic acids; one of a series of purified rosins.

isologous. Having similar proportions or relations.

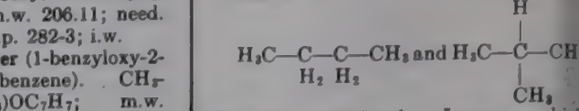
α-isomalic acid (2-hydroxy-2-methylpropanedioic acid; α-hydroxyisosuccinic acid). $CH_3C(OH)(COOH)_2$; m.w. 134.05; col. cr.; s.w.; s.al.

isomannide. $C_6H_{10}O_4$; m.w. 146.08; col. monocl.; m.p. 87; s.w.; s.al.

isomer, space. See stereoisomer.

isomerism. Phenomenon of identity of composition as regards number and kind of atoms in substances, but difference in properties due to different atomic arrangement.

isomers. Compounds identical with respect to number and kind of constituent atoms, but having different molecular structures, e.g. the compounds butane and isobutane, each represented by the formula C_4H_{10} but having the respective structures:



isomers, rotational. Isomers which differ only in relative azimuth of half of the molecule; compounds whose structures are mirror images of each other, and produce opposite optical rotation.

isometric drawing. A type of drawing which does not utilize vanishing points.

α-isomorphine. $C_{17}H_{19}NO_3$; m.w. 285.16; m.p. 247.

isomorphism. The phenomenon of similarity of crystal structure, similar lattice dimensions, and similar chemical composition exhibited by two or more substances.

isomorphism, law of. Compounds which have identity of crystalline form have similar chemical formulae.

isomotic solutions. Two solutions, separated by a porous membrane, whose osmotic pressures are in equilibrium.

isonaphthazarin (2, 3 [or 3, 4]-dihydroxy-1, 4-naphthoquinone). $C_{10}H_4O_2(OH)_2$; m.w. 190.05; or.-red. leaf.; m.p. 280; s.w.; s.al.

isonicoteine. $C_{10}H_{12}N_2$; m.w. 160.1; liq.; b.p. 293; s.w.

isonicotine. $C_{10}H_{14}N_2$; m.w. 162.13; cr.; m.p. 78.

isonicotinic acid (4-pyridinecarboxylic acid). C_5H_4NCOOH; m.w. 123.0; col. need.; m.p. 317; s.w.; s.al.

isonicotinic anhydride. $(C_5H_4NCO)_2O$; m.w. 228.08; m.p. 103-4.

isonitrile. See carbylamine.

isooctane. See heptane, 2-methyl-pentane, 2, 2, 4-trimethyl-.

isopentane. See butane, 2-methyl-.

isophote. Line or surface on which all points have same light intensity.

isophthalaldehyde (1, 3-benzenedicarbonal; m-phthalic aldehyde). $C_6H_4(CHO)_2$; m.w. 134.05; need.; m.p. 89.5; s.w.; s.al.

isophthalaldehydic acid (m-formylbenzoic acid). $CHOC_6H_4COOH$; m.w. 150.05; need. f.w.; m.p. 175; s.al.

isophthalaldehydic acid, 2-hydroxy- (2-formyl-2-hydroxybenzoic acid). $CHOC_6H_3(OH)COOH$; m.w. 166.05; need. m.p. 179; s.al.

isophthalaldehydic acid, 4-hydroxy- (4-formyl-4-hydroxybenzoic acid). $CHOC_6H_3(OH)COOH$; m.w. 166.05; p. m.p. 243-4; s.w.; s.al.

isophthal aldehydic acid, 6-hydroxy- (5-formyl-2-hydroxybenzoic acid $CHOC_6H_3(OH)COOH$; m.w. 166.0 need.; m.p. 248-9; s.al.

isophthalic acid (1, 3-benzenedicarboxylic acid; m-phthalic acid). $C_6H_4(COOH)_2$; m.w. 166.05; col. needf.h.w.; m.p. 330; s.al.

isophthalic acid, diethyl ester (ethm-phthalate). $C_6H_4(COOC_2H_5)_2$; m. 222.11; col. liq.; b.p. 285.

isophthalic acid, dimethyl ester (methyl 1, 3-benzenedicarboxylate; methyl isophthalate). $C_6H_4(COCH_3)_2$; m.w. 194.08; col. need. f.dil.m.p. 68; i.w.

isophthalic acid, 4, 6-dimethyl-. α-cumidic acid.

isophthalic acid, 2-hydroxy-. HOC_6H

$(COOH)_2$; m.w. 182.05; col. need. w.; m.p. hyd. 239, anh. 244; s.al.

hthalic acid, 4-hydroxy-. $HOC_6H_3(COOH)_2$; m.w. 182.05; col. need. w.; m.p. 310; s.al.

phthalic acid, 5-hydroxy-. $HOC_6H_3(COOH)_2$; m.w. 182.05; need. f.w.; n.w. hyd. $-2H_2O$, 100, anh. 288; s.w.; s.al.

phthalic acid, 5-methyl-. See uvitic acid.

phthalic acid, 5-nitro-. $NO_2C_6H_3(COOH)_2 \cdot 1\frac{1}{2}H_2O$; m.w. 238.07; col.-grn. leaf.; s.al.

phthalonitrile (1, 3-benzenedicarbonitrile; 1, 3-dicyanobenzene). $C_6H_4(CN)_2$; m.w. 128.05; col. need.; m.p. 161; s.w.; s.al.

phthalyl chloride (1, 3-benzene-dicarbonyl chloride; m-phthalyl dichloride). $C_6H_4(COCl)_2$; m.w. 202.95; cr.; m.p. 41; b.p. 276.

oprene (2-methyl-1, 3-butadiene; β-methylbivinyl; hemiterpene). $CH_2{:}CHC(CH_3){:}CH_2$; m.w. 68.06; col. liq.; m.p. −120; b.p. 34; i.w.; s.al.

opropanolamine, mixed. Mixture of mono-, di-, and triisopropanolamine; viscous, hygroscopic liquid; sp.gr. 1.004-1.010 at 25/25° C.; s.w.; in cosmetics.

opropenyl bromide. See propene, 2 bromo-.

opropenyl chloride. See propene, 2-chloro-.

opropyl acetate. See acetic acid, isopropyl ester.

opropyl alcohol (2-propanol; dimethylcarbinol). $CH_3CHOHCH_3$; m.w. 60.06; col. liq.; m.p. 88.5; b.p. 82.3; s.w.; s.al.

opropyl alcohol, dichloro-. See α-dichlorohydrin.

opropyl aldehyde. $CH_3CH{\cdot}O{\cdot}CH_3$; used in organic synthesis.

opropylamine. $(CN_3)_2CHNH_2$; m.p. 59.08; col. liq., m.p. −101.2; b.p. 34; s.w.; s.al.

opropyl bromide (2-bromopropane). $CH_3CHBrCH_3$; m.w. 122.97; col. liq.; m.p. −89; b.p. 59.6; s.al.

opropyl chloride (2-chloropropane). $CH_3CHClCH_3$; m.w. 78.51; col. liq.; m.p. −117; b.p. 35.4; s.al.

opropyl cyanide. See isobutyronitrile.

opropyl ether (2-isopropoxypropane; diisopropyl ether). $(CH_3)_2CHOCH(CH_3)_2$; m.w. 102.11; col. liq.; sp.gr. 72.58; m.p. −60; b.p. 67.5; s.al.; solvent; oil dewaxing; concentration of organic acids by extraction.

opropyl fluoride (2-fluoropropane). CH_3CHFCH_3; m.w. 62.05; gas.; b.p. −11.

opropylidene chloride. See propane, 2, 2-dichloro-.

opropyl iodide (2-iodopropane). CH_3CHICH_3; m.w. 169.97; liq.; m.p. −90.8; b.p. 89.5; s.al.

opropyl isocyanide. $(CH_3)_2CHNC$; m.w. 69.06; col. liq.; b.p. 87; i.w.; s.al.

opropyl mercaptan. See 2-propanethiol.

opropyl mustard oil. See isothiocyanic acid, isopropyl ester.

opropyl nitrate (2-propanol nitrate). $(CH_3)_2CHNO_3$; m.w. 105.06; liq.; b.p. 102.

opropyl nitrite (2-propanol nitrite). $(CH_3)_2CHONO$; m.w. 89.06; liq.; b.p. 45.

opropyl sulfide (2-[isopropylthio]-propane; diisopropyl sulfide). $(CH_3)_2CHSCH(CH_3)_2$; m.w. 118.17; liq.; b.p. 120.4; i.w.; s.al.

isopurpurin. See anthrapurpurin.

isoquinoline (benzo[c]pyridine; 2-benzazine; leucoline). $C_6H_4CH{:}N{-}CH{:}CH$; m.w. 129.06; col. pl. or liq.; m.p. 23; b.p. 243; s.w.

isoquinoline, 1, 2, 3, 4-tetrahydro-6-methoxy-1-methyl-7, 8-methylene dioxy-. See anhalonine.

isoquinoline, nitro-. $NO_2C_9H_6N$; m.w. 174.06; need. f.w.; m.p. 110; s.w.; s.al.

1-isoquinolinol, 1 (2)-isoquinolone. See isocarbostyril.

isorubber. Material having same ultimate composition as rubber, but very different properties.

isosaccharic acid (tetrahydro-3, 4-dihydroxy-2, 5-furandicarboxylic acid). $COOHCH(CHOH)_2CHCOOH$; m.w. 192.06; rhomb.; m.p. 185; s.w.; s.al.

isosafrole (3, 4-methylenedioxy-1-propenylbenzene). $CH_2(O_2)C_6H_3{-}CH{:}CHCH_3$; m.w. 162.08.
cis: m.p. < −18; b.p. 242-3; i.w.; s.al.
trans: b.p. 248-52; i.w.; s.al.

isosceles. A type of triangle having two sides equal in length.

isostasy. The balancing and vertical adjustment of adjacent portions of the earth's crust in accordance with the laws of flotation, a proposed explanation for vertical movements in the lithosphere.

isosteres. Compounds with the same total number and arrangement of electrons and having similar physical properties, e.g. carbon dioxide and nitrous oxide.

isosuccinic acid (2-methylpropanedioic acid; methylmalonic acid). $CH_3CH(COOH)_2$; m.w. 118.05; col. pr. or need.; s.w.; s.al.

isosuccinic acid, α-hydroxy-. See α-isomalic acid.

isothebaine (d). $C_{19}H_{21}NO_3$; m.w. 311.17; rhomb. f. al. or et.; m.p. 203-4.

isothebaine (d), sulfate. $(C_{19}H_{21}NO_3)_2 \cdot H_2SO_4$; m.w. 720.42.

isotherm. Imaginary line drawn through points on a map having the same temperature. A graph of pressure-volume relation at constant temperature.

isothermal. A term applied to changes involving absorption or liberation of heat wherein there is a free exchange of heat between the system and its immediate surroundings with the maintenance of a constant temperature in the system.

isothermal region. See stratosphere.

isothiocyanic acid, allyl ester (2-propenyl isothiocyanate; allyl mustard oil). $CH_2{:}CHCH_2NCS$; m.w. 99.11; col. oil.; m.p. −100; b.p. 150.7; s.al.

isothiocyanic acid, amyl ester (n-amyl mustard oil). $CH_3(CH_2)_4NCS$; m.w. 129.15; liq.; b.p. 193.4; s.w.; s.al.

isothiocyanic acid, benzyl ester (benzyl mustard oil). $C_6H_5CH_2NCS$; m.w. 149.12; liq.; b.p. 243; i.w.; s.al.

isothiocyanic acid, p-biphenylyl ester. See isothiocyanic acid, xenyl ester.

isothiocyanic acid, butyl ester (butyl mustard oil). $CH_3(CH_2)_2CH_2NCS$; m.w. 115.14; liq.; b.p. 167; i.w.; s.al.

isothiocyanic acid, sec-butyl ester (α-methylpropyl isothiocyanate; sec-butyl mustard oil). $C_2H_5CH(CH_3)NCS$; m.w. 115.14; liq.; b.p. 159.5; i.w.; s.al.

isothiocyanic acid, tert-butyl ester (α, α-dimethylethyl isothiocyanate; tert-butyl mustard oil). $(CH_3)_2CNCS$; m.w. 115.14; liq.; m.p. 10.5; b.p. 140 [770]; i.w.; s.al.

isothiocyanic acid, ethyl ester (ethyl mustard oil). C_2H_5NCS; m.w. 87.11; col. liq.; m.p. −5.9; b.p. 132; i.w.; s.al.

isothiocyanic acid, isoamyl ester (γ-methylbutyl isothiocyanate). $C_6H_{11}NCS$; m.w. 129.15; yel. liq.; b.p. 182; s.w.; s.al.

isothiocyanic acid, isobutyl ester (isobutyl mustard oil; β-methylpropyl isothiocyanate). $(CH_3)_2CHCH_2NCS$; m.w. 115.14; liq.; b.p. 162; i.w.; s.al.

isothiocyanic acid, isopropyl ester (isopropyl mustard oil; β-methylpropyl isothiocyanate). $(CH_3)_2CHCH_2NCS$; m.w. 115.14; liq.; b.p. 162; i.w.; s.al.

isothiocyanic acid, methyl ester (methyl mustard oil). $CH_3N{:}CS$; m.w. 73.09; col. cr.; m.p. 35; b.p. 119; s.w.; s.al.

isothiocyanic acid, phenyl ester (phenyl mustard oil). C_6H_5NCS; m.w. 135.11; col. liq.; m.p. −21; b.p. 218.5; i.w.; s.al.

isothiocyanic acid, propyl ester (n-propyl mustard oil). $CH_3CH_2CH_2NCS$; m.w. 101.12; liq.; b.p. 152.7 [740]; s.w.; s.al.

isothiocyanic acid, o-tolyl ester (o-tolyl mustard oil). $CH_3C_6H_4NCS$; m.w. 149.12; col. oil; b.p. 239; i.w.; s.al.

isothiocyanic acid, p-tolyl ester (p-tolyl mustard oil). $CH_3C_6H_4NCS$; m.w. 149.12; need. f.et.; m.p. 26; b.p. 237.

isothiocyanic acid, xenyl ester (xenyl mustard oil; p-biphenylyl isothiocyanate; p-biphenylyl mustard oil). $C_6H_5C_6H_4NCS$; m.w. 211.14; need. f.et.; m.p. 58.

isotonic. Of equal osmotic pressure, e.g. 0.9% sodium chloride solution and mammalian serum are isotonic with each other.

isotonic coefficient. Ratio between observed abnormal maximum osmotic pressure of one solution and maximum osmotic pressure of an equimolecular solution which gives normal osmotic pressures.

isotope. One of two or more elements having the same atomic number but different atomic weights.

isotropic. Having its properties the same in all directions, e.g. carefully annealed copper.

isovaleraldehyde (3-methylbutanal; isoamyl aldehyde). $(CH_3)_2CHCH_2CHO$; m.w. 86.08; col. liq.; m.p. −51; b.p. 92.5; s.w.; s.al.

isovaleraldehyde, oxime (3-methylbutanal oxime). $(CH_3)_2CHCH_2CH{:}NOH$; m.w. 101.09; m.p. 48.5; b.p. 164-5.

isovaleramide (3-methylbutanamide; isopropylacetamide). $(CH_3)_2CHCH_2CONH_2$; m.w. 101.09; monocl. pl.f.al.; m.p. 135; b.p. 230-2; s.w.; s.al.

isovaleric acid (3-methylbutanoic acid, isopropylacetic acid, isobutylformic acid). $(CH_3)_2CHCH_2COOH$. m.w. 102.08; colorl. liq.; m.p. −37.6; b.p. 176.7; sp.gr. 0.931; s.w., s.al.; used in synthetic flavors and perfumes.

isovaleric acid, allyl ester (allyl isovalerate; 2-propenyl 3-methylbutanoate). $(CH_3)_2CHCH_2CO_2C_3H_5$; m.w. 142.11; liq.; b.p. 155; s.w.; s.al.

isovaleric acid, α-amino-. See valine.

isovaleric acid, β-amino- (3-amino-3-methylbutanoic acid). $(CH_3)_2C(NH_2)CH_2COOH$; m.w. 117.09; pr.; m.p. 217; s.w.; s.al.

isovaleric acid, α-bromo- (2-bromo-3-methylbutanoic acid). $(CH_3)_2CHCHBrCOOH$; m.w. 180.99; col. pr.; m.p. 44; b.p. 230; s.w.; s.al.

isovaleric acid, ethyl ester. $(CH_3)_2CHCH_2COOC_2H_5$; m.w. 130.11; col. liq.; m.p. −99.3; b.p. 135; s.al.

isovaleric acid, α-hydroxy-(i) (2-hydroxy-3-methylbutanoic acid). $(CH_3)_2CHCHOHCOOH$; m.w. 118.08; rhomb.; m.p. 86; s.w.; s.al.

isovaleric acid, β-hydroxy- (3-hydroxy-3-methyl butanoic acid). $(CH_3)_2COHCH_2COOH$; m.w. 118.08; syrup; m.p. < −32; s.w.; s.al.

isovaleric acid, isoamyl ester (isoamyl isovalerate; γ-methylbutyl 3-methylbutanoate). $(CH_3)_2CHCH_2COOC_5H_{11}$; m.w. 172.16; col. liq.; b.p. 194; s.w.; s.al.

isovaleric acid, isobutyl ester (isobutyl-isovalerate; β-methylpropyl 3-methylbutanoate). $(CH_3)_2CHCH_2COOCH_2CH(CH_3)_2$; m.w. 158.14; col. liq.; b.p. 168.5; i.w.; s.al.

isovaleric acid, methyl ester (methyl 3-methylbutanoate; methyl isovalerate). $(CH_3)_2CHCH_2COOCH_3$; m.w. 116.09; col. liq.; b.p. 116.7; s.w.; s.al.

isovaleric acid, p-phenylphenacyl ester. $(CH_3)_2CHCH_2COOCH_2COC_6H_4C_6H_5$; m.w. 296.16; m.p. 76.

isovaleric ester, piperazinium salt. $C_4H_{10}N_2 \cdot 2C_4H_9COOH$; m.w. 290.25; wh. cr.; m.p. 139-40; s.w.; s.al.

isovaleric acid, propyl ester (n-propyl isovalerate). $(CH_3)_2CHCH_2COOC_3H_7$; m.w. 144.12; col. liq.; b.p. 155.9; i.w.; s.al.

isovalerone. See 4-heptanone, 2, 6-dimethyl-.

isovaleronitrile (3-methylbutanenitrile; isobutyl cyanide). $(CH_3)_2CHCH_2CN$; m.w. 83.08; col. liq.; b.p. 129.3; s.w.; s.al.

isovalerophenone (isobutyl phenyl ketone; 3-methyl-1-phenyl-1-butanone). $(CH_3)_2CHCH_2COC_6H_5$; m.w. 162.11; col. liq.; b.p. 225; i.w.; s.al.

isovaleryl chloride (3-methylbutanoyl chloride). $(CH_3)_2CHCH_2COCl$; m.w. 120.53; col. liq.; b.p. 113.

dl-isovaline (dl-α-amino-α-methylbutyric acid; dl-2-amino-2-methylbutanoic acid). $CH_3CH_2C(NH_2)(CH_3)COOH$; m.w. 117.09; monocl. pr.; m.p. 307-8 (closed tube); s.w.

isovanillin (3-hydroxyanisaldehyde; protocatechualdehyde 4-methyl ether). $CH_3O(OH)C_6H_3CHO$; m.w. 152.06; monocl. pr. or pl.; m.p. 116; b.p. 179 [15]; s.w.; s.al.

isoxylic acid (2, 5-dimethylbenzoic acid; 2, 5-xylic acid; p-xylic acid). $(CH_3)_2C_6H_3COOH$; m.w. 150.08; col. need. f.al.; m.p. 132; b.p. 268; s.w.; s.al.

isuretin. See formamide, oxime.

itaconic acid (methylenebutanedioic acid; methylenesuccinic acid). $HOOC(:CH_2)CH_2COOH$; m.w. 130.05; rhomb.; s.al.

itaconic acid, γ, γ-dimethyl-. See teraconic acid.

Italian red. See iron (ic) oxide.

itamalic acid, γ-lactone. See paraconic acid.

-ite. Suffix denoting a salt of an -ous acid, e.g. sodium chlorite, $NaClO_2$, a salt of chlorous acid.

-ivity. Suffix denoting properties independent of size or shape (specific property), e.g. conductivity.

Ivorax. Synthetic tar-acid resin.

ivory black. Pure carbon made by burning ivory wastes.

Izod test. Measure of amount of energy absorbed in fracturing a test piece of metal by means of a swinging pendulum.

J

J acid (2-amino-5-naphthol-7 sulfonic acid). $C_{10}H_9NO_4S$; m.w. 239.12; gr. or wh. cryst.; s.w.; used in mfr. of diazo dyestuffs.

J value. Value of inner quantum number in atoms or of rotational quantum number in molecules.

jaborandi (pilocarpus). Dried leaflets of pilocarpus j.; containing the alkaloids pilocarpine, jaborine and pilocarpidine; used in medicine.

jalap. Dried root of exogonium j. containing convolvulin ($C_{31}H_{50}O_{16}$) and jalapin ($C_{34}H_{56}O_{16}$), used in medicine.

jamesonite (feather ore). $Pb_2Sb_2S_5$; m.w. 858.26; s.g. 5.5-6.0; gray.

Jamestown weed. See stramonium.

japaconine, acetylbenzoyl-. See japaconitine.

japaconitine (acetylbenzoyl, japaconine; same as aconitine?). $C_{34}H_{47}NO_{11}$; m.w. 645.37; col. need. f.al.,et., or chl.; i.w.; s.al.

japan (japan lacquer). Varnish for wood and metal, made by heating linseed oil, litharge and Prussian blue, thinned with a solvent.

japan camphor. See d-camphor.

japan lacquer. See japan.

Japan tallow. See wax, Japan.

Japan wax. See wax, Japan.

japanning. The art of coating an object with varnishes which are then hardened by heat.

jargon. See zircon.

jarosite. A mineral, $K_2Fe_6(OH)_{12}(SO_4)_4$; rhomb., ocher-yel., br.; sp.gr. 3.15-3.26; hardness 2.5-3.5.

jasmal. $(CH_2O)_2CHC_6H_5$; m.w. 150.08; s.g. 1.334; b.p. 218; odoriferous principle of jasmine flowers.

jasmine. Semi-climbing plants, whose flowers yield jasmine oil, the latter used in perfumery and soap-making; the oil contains benzyl and linalyl acetates, linalol and indole.

jasp-agate. See jasper.

jasper (jasp-agate, jaspilite, agate, jasper). Impure form of quartz; red, yel., gr., bl.; used as an ornamental stone.

jaspilite. See jasper.

Java ratio. Ratio of percentage of sucrose in cane to percentage of sucrose in crusher juice.

Javelle water. Solution formed when chlorine reacts with sodium hydroxide solution; a solution containing sodium chloride and sodium hypochlorite; disinfecting and bleaching agent.

jellies. Food products prepared from fruit juices which have been evaporated and to which sugar has been added. They "jellie" because of the pectin, or vegetable jelly, that they contain.

jelutong. See gum, pontianak.

Jensen-Kirschner value. The number of c.c. of N/10 alkali required to neutralize a distilled silver sulfate filtrate from 100 c.c. of Reichert-Meissl distillate. It is a measure of the butyric acid in fats.

jervine. $C_{26}H_{37}NO_3 \cdot 2H_2O$; m.w. 447.33; lng. grouped pr.; m.p. 238-42; i.w.; s.al.

jet. A polishable black lignite; used for jewelry.

jimson weed. See stramonium.

Joanite. Synthetic tar-acid resin.

joint. Large, more or less vertical crack in rock formations.

Jones effect. The surface tension of salt solutions first decrease with an increase of concentration, passes thru a minimum at a concentration of about 0.001c and then increases as the concentration is raised so that at concentrations above 0.005-0.01c it is greater than that of the pure solvent.

josëite (telluric bismuth). Bi_4Te_3; m.w. 2086.6; s.g. 7.9.

josephinite. Fe_2Ni_3; m.w. 405.1 natural alloy.

joule, absolute. Measure of work a energy, equal to 2.778×10^{-7} kilowat hour; 3.725×10^{-7} horse-power hou 1.0197×10^{4} gram-centimeter 1×10^{7} ergs. See erg.

Joule effect. Expansion due to magnet zation.

Joule-Thompson effect. Cooling effe produced when a highly compresse gas is allowed to expand into a lo pressure chamber so that no work done against external pressure.

juglone (5-hydroxy-1, 4-naphthoquinon nucin). $C_{10}H_5O_2(OH)$; m.w. 174.0 red-br. pr. f. chl.; m.p. 153-4; i.w.; s.a

juniper (juniperus, juniper berry Berries, wood and top of j. communi used in medicine, liquor and fum gating.

juniper berry. See juniper.

Juniper gum. See gum, Juniper.

jute. Bast fiber of corchorus; used make bags and twine.

K

K acid. See 1-amino-β-naphthol 4, 6 disulfonic acid.

K_{23} scale. Measure of wetting characteristics of a solid.

K series. Series of x-ray spectrum frequencies of an element thought to be due to change of electrons from various higher quantum states to the state whose principal quantum number is 1.

kafir. See sorghum.

kainite. A mineral, $MgSO_4 \cdot KCl \cdot 3H_2O$; monocl., wh.-gray or redsh.; sp.gr. 2.067-2.188; hardness 2.5-3.0; occurs in the Stassfurt deposits.

kairoline (1-methyl-1, 2, 3, 4-tetrahydroquinoline). $C_9H_{10}NCH_3$; m.w. 147.11; liq.; b.p. 245.5; s.al.

kalinite. See aluminum potassium sulfate.

kaliophilite (phacellite). A mineral, $KAlSiO_4$, hex. or fine threads, col.; sp.gr. 2.49-2.67; hardness 6.

Kalsomine. A china clay preparation for non-alkali proof colors.

kaneit. See manganese arsenide.

kaolin. See clay.

kaolinite (china clay, kaolin). A mineral, $Al_2O_3 \cdot 2SiO_3 \cdot 2H_2O$; monocl., wh., redsh., yelsh., blsh., grnsh., brnsh.; sp.gr. 2.60-2.63; hardness 2.0-2.5.

kapok (kapoc). A fine fluffy substance covering the seeds of various plants and which is impervious to water. An edible oil, kapok oil, is obtained from the seeds which is used in soapmaking.

karaya, gum. See gum karaya.

karyokinesis. Indirect (mitotic) division of cells.

karyoplasm. See nucleus.

katabolism. The process of breaking-down in an organism; the antithesis of anabolism, both constituting metabolism.

Katadyn process. Process for sterilizing water by small traces of silver or other metals.

katamorphism. Destructive changes in rocks.

katchung oil. See oil, peanut.

katharometer (shakespear). An instrument for determining composition of a mixture of known gases by measurement of thermal conductivity.

kathode. See cathode.

katholyte. See catholyte.

katio-enoid systems. Systems (e.g. C═C—C═O,C═C—C═N) containing hetero-atoms which tend to abstract electrons and thus produce carbon kations, e.g. crotonic aldehyde.

kationoid. See anionoid.

Kaufmann number. Measure of double bonds in oils based on thiocyanate iodine number.

kauri, gum. See gum kauri.

kauri-reduction test. Test of durability or toughness of a varnish.

Keebush. Synthetic oil soluble tar-acid resin.

Keene's cement. "Dead-burnt" gypsum or partially calcined gypsum mixed with a little alum which catalyzes rehydration; used as imitation marble.

Kelgin. Sodium alginate.

Kellite. Synthetic tar-acid resin.

Kelo-Form. Ethylaminobenzoate.

kelp. A large seaweed containing ammonia, phosphoric acid, potash and iodine; source of iodine and potash.

Kelvin (K.) degrees. Temperature in degrees Centigrade plus 273.

Kelvin effect. See Thomson thermoelectric effect.

kemp. Dead or inferior wool fibers which do not dye properly.

Kennelly-Heaviside layer. See ionosphere.

kephalin (cephalin). A phospholipin occurring with lecithin in most animal and vegetable tissues, and abundantly in brain tissue; i.al.

Kepler's laws.

I. The planets move about the sun in ellipses, at one focus of which the sun is situated.

II. The radius vector joining each planet with the sun describes equal areas in equal times.

III. The cubes of the mean distances of the planets from the sun are proportional to the squares of their times of revolution about the sun.

kerasin. A compound found in the brain, containing nitrogen but no phosphorus lignoceric acid (a fatty acid) and galactose; a glycolipid or cerebroside.

keratin. A protein obtained from hoofs, nails and hair containing a large amount of cystine; see albuminoid.

kerite. Natural solid bitumen consisting chiefly of kerotenes; insoluble in carbon disulfide.

kermes (kermes berries, scarlet corns, grains of kermes, alkermes). The dried shield louse (coccus ilicus) females; contains kermesic acid, $C_{18}H_{12}O_9$; red dye; oldest coloring matter known.

kermesite (pyrostibnite, antimony blend, pyroantimonite). $2Sb_2S_3 \cdot Sb_2O_3$; red mineral, sp.gr. 4.5-4.6.

kernel. Line in a conductor of electricity along which the magnetic intensity due to the current equals zero.

kerogen. Complex bituminous substance found in oil shales.

kerol. Portion of kerotene soluble in chloroform and pyridin.

kerole. Portion of kerotene insoluble in chloroform and soluble in pyridin.

kerosene. The 150-300° C distilled fuel oil fraction of petroleum; s.g. 0.80-0.81; used as an illuminant and fuel.

kerotene. Portion of bitumen insoluble in carbon disulfide.

Kerr effect (electric double refraction). Double refraction produced in certain isotropic substances by an electric field transverse to the beam of light.

ketal. Higher ketone acetal.

ketazine, dimethyl-. See acetone, azine.

ketene. Unsaturated compound of the type $R_2C{=}C{=}O$ in which the same carbon atom is involved in both a carbonyl and an ethylenic double bond.

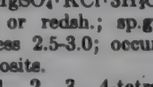
ketene (ethenone; carbomethene; keten). $CH_2{:}CO$; m.w. 42.02; col. gas.; m.p. −151; b.p. −56.

Ketenone M.O. Methyl ethyl benzoyl benzoate.

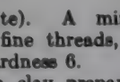
ketimine. A compound of the general formula $R \cdot C(=NH) \cdot R'$.

ketine (2, 5-dimethylpyrazine). $N{:}C(CH_3)CH{:}NC(CH_3){:}CH$; m.w. 108.08; col. liq.; m.p. 15; b.p. 155; s.w.; s.al.

keto-enol tautomerism. Structural change in organic compounds involving the movement of a hydrogen atom from carbon to oxygen or vice versa and the simultaneous shifting of a double bond between the carbonyl and ethylenic types; see keto and enol forms.

keto form. Structure represented by  which may be changed to the enol form (q.v.).

ketogenesis. Incomplete oxidation of fatty acids in the body.

ketone. Organic compound of form: 

ketone, adipic. See cyclopentanone.

ketone, aminophenyl methyl. See acetophenone, amino-.

ketone, aminophenyl phenyl. See benzophenone, amino-.

ketone, amyl. Mixture of methylpropyl ketone and diethyl ketone; water-wh. liq.; sp.gr. 0.809; used as solvent and plasticizer.

ketone, amyl ethyl. See 3-octanone.

ketone, amyl methyl. See 2-heptanone.

ketone, p-anisyl methyl. See acetophenone, p-methoxy-.

ketone, benzyl ethyl. See 2-butanone, 1-phenyl-.

ketone, benzyl methyl. See 2-propanone, 1-phenyl-.

ketone, benzyl-1-naphthyl (α-phenyl-1-acetonaphthone). $C_6H_5CH_2COC_{10}H_7$; m.w. 246.11; pl.f.al.; m.p. 66-7; i.w.; s.al.

ketone, benzyl 2-naphthyl. $C_6H_5CH_2COC_{10}H_7$; m.w. 246.11; col. need. f.al.; m.p. 99.5; s.al.

ketone, benzyl phenyl. See desoxybenzoin.

ketone, bisaminophenyl. See benzophenone, diamino-.

ketone, bischloromethyl. See 2-propanone, 1, 3-dichloro-.

ketone, bishydroxyphenyl. See benzophenone, dihydroxy-.

ketone, α-bromoisopropyl 2-mesityl. See isobutyrophenone, α-bromo-2, 4, 6-trimethyl-.

ketone, 5-bromo-2-thienyl methyl (2-acetyl-5-bromothiophene). $CH_3CO{-}C_4H_2BrS$; m.w. 205.02; col. need.; m.p. 94; s.al.

ketone, butyl methyl. See 2-hexanone.

ketone, sec-butyl methyl. See 2-pentanone, 3-methyl-.

ketone, tert-butyl methyl. See pinacolin.

ketone, butyl phenyl. See valerophenone.

ketone, carvacryl methyl. See acetophenone, 5-isopropyl-2-methyl-.

ketone, p-chlorophenyl methyl. See acetophenone, p-chloro-.

ketone, 5-chloro-2-thienyl methyl (2-acetyl-5-chlorothiophene). $CH_3CO{-}C_4H_2ClS$; m.w. 160.56; pl.; m.p. 52; s.al.

ketone, cinnamyl methyl. See acetone, benzal-.

ketone, cyclobutyl phenyl (benzoylcyclobutane; benzoyltetramethylene). $C_6H_5COCH(CH_2)_3$; m.w. 160.09; b.p. 258.

ketone, diamyl. See diamyl ketone.

ketone, dibenzyl. See 2-propanone, 1, 3-diphenyl-.

ketone, dibutyl. See 5-nonanone.

ketone, dichloromethyl methyl. See 2-propanone, 1, 1-dichloro-.

ketone, dicinnamyl. See styryl ketone.

ketone, diethyl. See 3-pentanone.

ketone, dihendecyl. See 12-tricosanone.

ketone, diheptadecyl. See 18-pentatriacontanone.

ketone, diheptyl. See 8-pentadecanone.

ketone, dihexyl. See 7-tridecanone.

ketone, 2, 5-dihydroxyphenyl phenyl. See benzophenone, 2, 5-dihydroxy-.

ketone, diisoamyl. See 5-nonanone, 2, 8-dimethyl-.

ketone, diisobutyl. See 4-heptanone, 2, 6-dimethyl-.

ketone, diisopropyl. See 3-pentanone, 2, 4-dimethyl-.

ketone, dimethyl. See acetone.

ketone, dinaphthyl. See naphthyl ketone.

ketone, dinonyl. See 10-nonadecanone.

ketone, di-n-octyl. See 9-heptadecanone.

ketone, dipentadecyl. See 16-hentriacontanone.

ketone, dipentyl. See 6-hendecanone.

ketone, diphenyl. See benzophenone.

ketone, diphenylene. See 9-fluorenone.

ketone, dipropyl. See 4-heptanone.

ketone, distyryl. See styryl ketone.

ketone, 2, 2′-dithienyl-. See 2-thienyl ketone.

ketone, di-p-tolyl. See benzophenone, 4, 4′-dimethyl-.

ketone, diundecyl. See 12-tricosanone.

ketone, ethyl. See 3-pentanone.

ketone, ethyl butyl. See 3-heptanone.

ketone, ethyl heptyl. See 3-decanone.

ketone, ethyl hexyl. See 3-nonanone.

ketone, ethyl isoamyl. See 3-heptanone, 6-methyl-.

ketone ethyl isobutyl. See 3-hexanone, 5-methyl-.

ketone, ethyl isopropyl. See 3-pentanone, 2-methyl-.

ketone, ethyl methyl. See 2-butanone.

ketone, ethyl naphthyl. See propionaphthone.

ketone, ethyl octyl. See 3-hendecanone.

ketone, ethyl phenyl. See propiophenone.

ketone, ethyl propyl. See 3-hexanone.

ketone, 2-furyl methyl (2-acetylfuran). $C_4H_3O \cdot COCH_3$; m.w. 110.05; col. cr. f. pet. eth.; m.p. 33; b.p. 173; i.w.; s.al.

ketone, 2-furyl phenyl (2-benzylfuran). $C_4H_3O \cdot COC_6H_5$; m.w. 172.06; liq.; b.p. 285; i.w.; s.al.

ketone, hendecyl methyl. See 2-tridecanone.

ketone, heptyl methyl. See 2-nonanone.

ketone, hexyl methyl. See 2-octanone.

ketone, hexyl propyl. See 4-decanone.

ketone, 1-hydroxy-2-naphthyl methyl. See 2-acetonaphthone, 1-hydroxy-.

ketone, 1-hydroxy-2-naphthyl propyl. See 2-butyronaphthone, 1-hydroxy-.

ketone, 1-hydroxy-2-naphthyl styryl. See 2-acrylonaphthone, 1-hydroxy-3-phenyl-.

ketone, hydroxyphenyl hydroxyphenyl. See benzophenone, dihydroxy-.

ketone, isoamyl methyl. See 2-hexanone, 5-methyl-.

ketone, isoamyl phenyl. See isocaprophenone.

ketone, isobutyl methyl. See 2-

pentanone, 4-methyl-.

ketone, isobutyl phenyl. See isovalerophenone.

ketone, isobutyl propyl. See 4-heptanone, 2-methyl-.

ketone, α-isonitrosobutyl methyl. See 2, 3-hexanedione, 3-oxime.

ketone, α-isonitrosoethyl methyl. See 2, 3-butanedione, mono-oxime.

ketone, α-isonitrosopropyl methyl. See 2, 3-pentanedione, 3-oxime.

ketone, isopropropyl methyl. See 2-butanone, 3-methyl-.

ketone, isopropyl phenyl. See isobutyrophenone.

ketone, lauryl. See 12-tricosanone.

ketone, methyl p-chlorophenyl. See acetophenone, p-chloro-.

ketone, methyl isobutyl. See 2-pentanone, 4-methyl-.

ketone, methyl naphthyl. See acetonaphthone.

ketone, methyl nonyl. See 2-hendecanone.

ketone, methyl octyl. See 2-decanone.

ketone, methyl phenacyl. See acetone, benzoyl-.

ketone, methyl phenyl-. See acetophenone.

ketone, methyl propyl-. See 2-pentanone.

ketone, methyl styryl. See acetone, benzal-.

ketone, methyl 2-thienyl (2-acetylthiophene; α-acetothienone). $CH_3CO\text{-}C_4H_3S$; m.w. 126.11; col. oil.; m.p. 9; b.p. 213.5.

ketone, methyl-p-tolyl. See acetophenone, p-methyl-.

ketone, Michler's. See benzophenone, 4, 4'-bisdimethylamino-.

ketone, naphthyl. See naphthyl ketone.

ketone, 1-naphthyl phenyl. $C_{10}H_7CO\text{-}C_6H_5$; m.w. 232.09; rhomb. f.al.; m.p. 75.5; b.p. 385; i.w.

ketone, 2-naphthyl phenyl. $C_{10}H_7CO\text{-}C_6H_5$; m.w. 232.09; rhomb. need. f.al.; m.p. 82; b.p. 398 [764]; i.w.

ketone, nitrophenyl phenyl. See benzophenone, nitro-.

ketone, phenyl-. See benzophenone.

ketone, phenyl propyl. See butyrophenone.

ketone, phenyl styryl. See chalcone.

ketone, phenyl m-tolyl. $C_6H_5COC_6H_4CH_3$; m.w. 196.09; col. liq.; b.p. 316.5, i.w.; s.al.

ketone, phenyl o-tolyl. $C_6H_5COC_6H_4CH_3$; m.w. 196.09; col. liq.; m.p. < -18; b.p. 316; i.w.; s.al.

ketone, phenyl trityl. See β-benzopinacolin.

ketone, pimelic. See cyclohexanone.

ketone, styryl. See styryl ketone.

ketone, 2-thienyl. See 2-thienyl ketone.

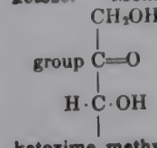
ketone, p-tolyl. $C_6H_5COC_6H_4CH_3$; m.w. 196.09; monocl.; m.p. 60; b.p. 326.5; i.w.; s.al.

Ketonone B. Butyl benzoyl benzoate.

Ketonone E. Ethyl-o-benzoyl benzoate.

Ketonone M. Methyl-o-benzoyl benzoate.

ketose. Monosaccharide containing



group

ketoxime, methyl ethyl. See 2-butanone, oxime.

ketoxime, methyl isopropyl. See 2-butanone, 3-methyl-, oxime.

ketoxime, methyl propyl. See 2-pentanone, oxime.

Kick's law. The energy necessary for crushing material is proportional to the logarithm of the ratio between the initial and final diameters.

kier. A term for the vessel in which yarn and cloth are boiled with an alkaline solution before they are bleached or dyed.

kier boiling. Process of removing waxes, dirt and other foreign matter from textiles.

kieselgühr. See infusorial earth.

kieserite. A mineral, $MgSO_4 \cdot H_2O$; monocl., col.-wh. or yelsh.; sp.gr. 2.57; hardness 3.0-3.5.

killed steel. See steel, killed.

kilo-. Prefix meaning 1000.

kilogram-calorie. The amount of heat required to raise the temperature of 1 kilogram of water 1° C.

kiloline. Unit of magnetic flux, 1000 maxwells.

kilometer (km.). 1000 meters or 1,093.68 yards.

kilowatt. Measure of power; 0.23889 kilogram-calorie (mean) per second; 1.3410 horse-power.

kilowatt hour. Measure of work and energy; 1.3410 horsepower-hours.

kinase. Complicated activator of enzymes.

kinematic viscosity. Ratio of viscosity to density.

kinetic energy. Energy due to motion, equal to $\frac{1}{2}$ of product of mass and velocity squared.

kinetic potential. See Lagrangian function.

King's blue. See cobalt aluminate.

king's green. See copper acetoarsenite.

kino, gum. See gum, kino.

kip. A pack of 30 skins; bundle of chamois skins; skin intermediate between calf and cow, weighing 16-25 lb. in green-salted condition; stress of 1000 pounds.

Kirchoff's laws:

I. The algebraic sum of the electric currents which meet at any point is zero.

II. In any closed circuit the algebraic sum of the products of the current and the resistance in each conductor in the circuit is equal to the electromotive force in the circuit.

In thermodynamics, the emissive power of a surface divided by its absorptivity is the same for all surfaces at a given temperature and is equal to the emissivity of a black body at that temperature.

kish. Graphite deposited by molten iron during smelting in blast furnace; dross on molten lead surface.

Kjeldahl's method. Determination of nitrogen in organic compounds by converting the combined nitrogen to ammonia which is reacted with a standard acid solution. This latter solution is titrated to determine the amount of ammonia and hence the percent of nitrogen in the original substance.

kleinite. See mercury oxychloride(ic).

knife-edge. Prepared edge of a scale or balance pivot, designed to make linear contact with an opposing bearing surface.

"knockout" drops. See chloral hydrate.

Koch acid (1-naphthylamine 3:6:8-trisulfonic acid). $C_{10}H_4(NH_2)(SO_3H)_3$; m.w. 383.25; light col. paste.; s.w.; used in mfr. of dyestuffs.

Kodaloid. Transparent nitrocellulose sheets.

Kodapak. Thin, transparent cellulose acetate sheets.

koettigite. See zinc arsenate, ortho-.

KOH number. Number of grams of KOH per 100 grams of rubber corresponding to end-point (at pH 10.7-11) in electrometric titration of latex with KOH.

Kohlrausch's law. Ions have independent migrations and the conductance of a solution is the additive conductances of the anions and cations.

kojic acid (5-hydroxy-2-[hydroxymethyl]-1, 4-pyrone). $OC(CH_2OH)\text{:}CHCOC(OH)CH$; m.w. 142.05; col. prismatic need.; m.p. 152-4; s.al.

kola nut. See cola nut.

konimeter. Instrument for collecting (on a glass disc covered with adhesive) dust in a small volume of air.

Konowálow's rule. The vapor phase is relatively richer in that component which causes an increase in vapor pressure when added to a mixture of liquids.

Kopol. Processed fossil gum used in varnish.

Kopp's law. The molecular heat of a solid compound is an additive function of the atomic heat capacities of its individual atoms; the molecular volume of a liquid is equal to the sum of the atomic volumes of its constituent atoms.

Koraton. Synthetic tar-acid resin.

Koroon. Basic chromium sulfate.

Koroseal. Plasticized highly polymerized vinyl chloride.

korporundal. Obeying both particle and wave laws, e.g. concept of photon.

kraeusen. Beer in an active state of fermentation.

Kraft paper. A brown strong tough paper made by the sulfate process; used for wrappings and bags.

krameria. See rhatany root.

Kreis test. Test for rancidity (autoxidation) of oils and fats made with an ether solution of phloroglucin and hydrochloric acid which gives a reddish pink coloration in the aqueous layer.

krennerite. $(Au,Ag)Te_2$; m.w. 550.08; silver-wh. to pale yel.; sp.gr. 8.35.

Kresosolvin. See Creolin.

kryolith. See cryolite.

krypton. Kr; at. wt. 83.7; col. d. 3.708 g/l; s.g. lq. $2.155^{-152.9}$; m.p. −157; b.p. −152.9; one of the inert gases.

kryptotroph. Nutritive substance which promotes growth.

Kunstharz 26Z. Synthetic tar-acid resin.

kunzite. See spodumene.

kyanizing. Treatment of wood with an aqueous solution of mercuric chloride to prevent decay.

kymograph. Instrument that records angular swings of a flying aircraft with reference to fixed axes in space.

kynurenic acid (4-hydroxyquinaldic acid). $C_9H_5N(OH)COOH$; m.w. 189.06; need.; m.p. ($-H_2O$, 140-5) anh. 257-8; s.al.

kynurine. See 4-quinolinol.

L

L acid. See 1-naphthol-5-sulfonic acid and 1-napthylamine-5-sulfonic acid.

L series. Series of x-ray spectrum frequencies of an element arising from change of electrons from different higher quantum states to the state of principal quantum number 2.

Labarraque's solution. An aqueous NaOCl solution containing at least 2.5% Cl_2; used in medicine for disinfecting.

labdanum, gum (ladanum). An oleoresin from cistus polymorphus; used in medicine and perfumery.

labile. Prone to undergo displacement or change in nature.

labordin. See analgen.

labradorite (Labrador feldspar). A mineral; a feldspar intermediate between albite and anorthite; $NaAlSi_3O_8$, $CaAl_2Si_2O_8$, ratio 1:1 to 1:3; tricl., gray, br. or grnsh.; sp.gr. 2.70-2.72; hardness 5.0-6.0.

lac. A natural resin, which when melted and strained forms shellac.

lac dye. A red dye obtained by the maceration of lac.

lac, mecca. See shellac.

lac, sulfur. See sulfur lac.

lac wax. A wax obtained from lac.

Laccain. Synthetic tar-acid resin.

laccase. An oxidase or oxidising enzyme which acts upon the pressed sap of rhus producing a lacquer.

lachrymators. Tear gases, generally aromatic compounds containing bromine in the side chain.

Lacimoid. A synthetic plastic resinoid product made by treating paper, wood, or fabric, with synthetic resins and then laminating it into a dense homogeneous unit under heat and pressure; used as a building material for walls, ceilings and cabinets.

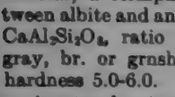
lacmoid (resorcinol blue). $C_6H_3(OH)_2$-$NOOHC_6H_3$; m.w. 231.07 dark-viol. cryst. scales; s.w.; s.al.; indicator.

lacmus. Chemically pure litmus.

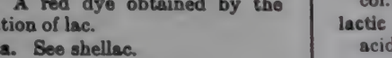
lacquer. A natural varnish, e.g. latex, shellac etc., also a coating prepared from nitrocellulose combined with a suitable plasticizer.

lacquer, japan. See japan.

lactam. Cyclic amide produced by removal of a molecule of water from a γ or δ amino acid, e.g.



lactam-lactim tautomerism. The shifting of a hydrogen atom from nitrogen to oxygen and vice versa.



lactamide (2-hydroxypropanamide; lactic amide). $CH_3CHOHCONH_2$; m.w. 89.06; col. hyg. cr.; m.p. 74; s.w.; s.al.

lactase. Enzyme which hydrolyzes lactose.

lactic acid (d) (d-2-hydroxypropanoic acid; d-α-hydroxypropanoic acid; sarcolactic acid; paralactic acid). $CH_3CHOHCOOH$; m.w. 90.05; hyg. pr. or syrupy liq.; m.p. 26; s.w.; s.al.

lactic acid (dl) (ordinary lactic acid; lactic acid of fermentation; 2-hydroxypropanoic acid). $CH_3CHOHCOOH$; m.w. 90.05; col. hyg. syrup; m.p. 18; b.p. 122 [15]; s.w.; s.al.

lactic acid, amyl ester. $CH_3CHOH \cdot COOC_5H_{11}$; m.w. 160.12; wh. to pale-yel. liq.; sp.gr. 0.954-0.966; b.p. 75-150; a cellulose ester solvent and plasticizer.

lactic acid (d), benzal-. See 3-butenoic acid, 2-hydroxy-4-phenyl-.

lactic acid (dl), benzoate (o-benzoyllactic acid). $CH_3CH(OOCC_6H_5)$-$COOH$; m.w. 194.08; pl.; m.p. 112; s.w.; s.al.

lactic acid, O-benzoyl-. See lactic acid, benzoate.

lactic acid (dl), butyl ester (butyl lactate). $CH_3CHOHCOOC_4H_9$; m.w. 146.11; liq.; b.p. 160-90; s.w.; s.al.

lactic acid (dl), ethyl ester (ethyl 2-hydroxypropanoate; ethyl lactate). $CH_3CHOHCOOC_2H_5$; m.w. 118.08; col. liq.; b.p. 154; s.w.; s.al.

lactic acid (dl), methyl ester (methyl 2-hydroxypropanoate; methyl lactate). $CH_3CHOHCOOCH_3$; m.w. 104.06; col. liq.; b.p. 144.8; s.al.

lactic acid, α-phenyl-. See atrolactic acid.

lactic acid (dl), p-phenylphenacyl ester. $CH_3CHOHCOOCH_2COC_6H_4C_6H_5$; m.w. 284.12; m.p. 145.

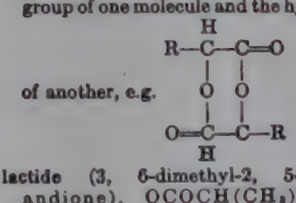
lactic acid (dl), piperazinium salt. $C_4H_{10}N_2 \cdot 2C_3H_6O_3$; m.w. 266.19; wh. cr.; m.p. 96.-6.5; s.w.; s.al.

lactic acid, β, β, β-trichloro-. CCl_3-$CHOHCOOH$, m.w. 193.39; pr.f.et.; m.p. 124; b.p. 170 [45]; s.w.; s.al.

lactic amide. See lactamide.

lactic anhydride (2-hydroxypropanoic anhydride). $(CH_3CHOHCO)_2O$; m.w. 162.08; lt. yel. amor.; s.w.; s.al

lactide. Cyclic di-ester formed by elimination of water between carboxyl group of one molecule and the hydroxyl of another, e.g.



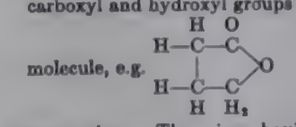
lactide (3, 6-dimethyl-2, 5-p-dioxandione). $OCOCH(CH_3)OCO-CH(CH_3)$; m.w. 144.06; col. monocl. tab. f.al.; m.p. 125; b.p. 255; s.w.; s.al.

lactobiose. See lactose.

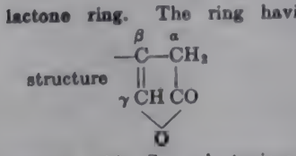
lactole. Cyclic form of hydroxyaldehydes and ketones.

lactometer (Soxhlet's lactometer). Hydrometer used for milk. Scale 25° (sp.gr. 1.025) to 35° (sp.gr. 1.035) divided into suitable divisions.

lactone. Cyclic ester formed by splitting off of one molecule of water between carboxyl and hydroxyl groups of same molecule, e.g.



lactone ring. The ring having the structure



lactonic acid. See galactonic acid.

lactonitrile (2-hydroxypropanenitrile; acetaldehyde cyanohydrin; ethylide cyanohydrin). $CH_3CH(OH)CN$; m.w. 71.05; col. liq.; m.p. −40; s.w.; s.al.

lactose (milk sugar; lactobiose). $C_{12}H_{22}O_{11} \cdot H_2O$; m.w. 360.19; col. rhomb.; m.p. anh. 201.6; b.p. d.; s.w.; i.al.; sp.gr. 1.525 (20° C.).

ladanum. See labdanum gum.

lady's slipper. See cypripedium.

laevogyrate. See levorotatory.

laevorotatory substance. Substance which rotates the plane of polarized light to the left. Its angle of rotation is preceded by a − sign.

lag phase. Phase immediately following the innoculation of a fresh sterile medium, when a culture is started, during which the bacteria do not multiply.

lag screw. Thick screw with square bolt head.

Lagrangian function (kinetic potential). Function of the difference between the kinetic and potential energy in a conservative system.

lake. Organic soluble color combined with an inorganic base or carrier; in the coloring of rubber, the pure metallic salt of an organic color precipitated on a sub-stratum to obtain full color value and better dispersibility.

lake, amaranth. See amaranth lake.

lake color. Dye used to make color lakes.

lambda value. Value of orbital angular momentum of a molecule about its axis of figure, as a multiple of the quantum number $h/2\pi$.

lambert. Measure of surface brightness equal to 0.3183 candle per sq. cm.; 1 lumen emitted per square centimeter of a perfectly diffusing surface.

Lambert's law. In passing through successive layers of equal thickness of a homogeneous material, equal fractions of the incident radiant energy are absorbed.

lamellar. Vector point function with a circuitation equal to zero.

Lamepon. Condensation product of fatty acid chloride and protein decomposition product used as wetting agent.

laminated glass. See safety glass.

laminated products. Products made from sheets of materials united by a binder.

lammelar sorbite. An aggregate of ferrite and of cementite particles larger in size and the particles found in lamellar troosite and exhibiting, when examined under high magnification, a marked tendency to form a lamellar structure.

lamellar troosite. An aggregate of ferrite and of particles of cementite of larger size than those present in martensite, and exhibiting under high magnification a tendency to form a lamellar structure.

lampblack. A finely divided carbon deposited by incompletely burned liquid hydrocarbons; used as a pigment, etc.

lanarkite. A mineral, $Pb_2O(SO_4)$; monocl., grnsh., wh., pa. yel. or gray; sp.gr. 6.3-6.8; hardness 2.0-2.5.

Landolt band. Dark band in field of crossed Nicol prisms under a source of intense light.

Langevin ion. Electrified particle in a gas produced by accumulation of gaseous ions upon dust or other nuclei.

lanigen. Water attracting substances in wool-fat.

Lanette wax. A commercial mixture of cetyl and stearyl alcohols; m.p. 50°; sp.gr. 0.81.

Lanette wax ester. Palmitic acid ester of mixed cetyl and stearyl alcohols; facilitates the making of emulsions.

Lanette wax SX. A mixture of cetyl and stearyl alcohols with a neutral emulsifier.

lanolin. See adeps lanae.

lanthanite. A mineral, $La_2(CO_3)_3 \cdot 9H_2O$; rhomb., grayish wh., pink, yelsh.; sp.gr. 2.6-2.74; hardness 2.5-3.0.

lanthanum. La; at. wt. 138.92; s.g. 6.15; m.p. 826; b.p. 1800; a metallic element of the rare earths, resembling iron physically.

lanthanum acetate. $La(C_2H_3O_2)_3 \cdot 1\frac{1}{2}H_2O$; m.w. 343.01; s.w.

lanthanum bromate. $La(BrO_3)_3 \cdot 9H_2O$; m.w. 684.81; m.p. 37.5; b.p. $-7H_2O$ 100; s.w.; i.al.

lanthanum bromide. $LaBr_3 \cdot 7H_2O$; m.w. 504.78; col. cr.; s.w.; s.al.

lanthanum carbide. LaC_2; m.w. 162.92; yel. cryst.; s.g. 5.02.

lanthanum carbonate. $La_2(CO_3)_3 \cdot 3H_2O$; m.w. 511.89; trimet. wh.; i.w.

lanthanum chlorate, per-, hexaantipyrine. $La(COC_{11}H_{12}N_2)_6(ClO_4)_3$; m.w. 2213.95; col. hex. cr.; m.p. 290-5; s.w.

lanthanum chloride. $LaCl_3$; m.w. 245.29; wh. deliq. cryst.; s.g. 3.842 [25]; m.p. 872; s.w.; s.al.

lanthanum chloride (hydrated). $LaCl_3 \cdot 7H_2O$; m.w. 371.40; tricl. wh., hyg.; s.w.; s.al.

lanthanum hydroxide. $La(OH)_3$; m.w. 189.94; wh. powd.; i.w.

lanthanum iodate. $La(IO_3)_3$; m.w. 663.68; col.

lanthanum iodide. LaI_3; m.w. 519.68; s.g. 5.057 [25]; m.p. 761±2.

lanthanum iodide, hexaantipyrine. $[La(COC_{11}H_{12}N_2)_6I_3]$; m.w. 2296.34 yel. cr.; m.p. 268-9 d.; s.w.

lanthanum molybdate. $La_2(MoO_4)_3$; m.w. 757.84; tetr.; s.g. 4.77 [16]; m.p. 1181; s.w.

lanthanum nitrate. $La(NO_3)_3 \cdot 6H_2O$; m.w. 433.04; col. deliq.; m.p. 40; b.p. 126; s.w.; s.al.

lanthanum oxalate. $La_2(C_2O_4)_3 \cdot 9H_2O$; m.w. 703.98; wh.; i.w.

lanthanum oxide, sesqui-. La_2O_3; m.p. 325.84; amor. or rhomb. wh.; s.g. 6.51; m.p. >2000; b.p. 4200; s.al.

lanthanum sulfate. $La_2(SO_4)_3$; m.w. 566.02; wh. powd., hyg.; s.g. 3.60 [15]; s.al.

lanthanum sulfate (hydrated). $La_2(SO_4)_3 \cdot 9H_2O$; m.w. 728.16; hex. col.; s.g. 2.821; s.al.

lanthanum sulfide. La_2S_3; m.w. 374.02; red-yel. cr.; s.g. 4.911 [11]; m.p. 2100 vac.

lanthanum tungstate. $La_2(WO_4)_3$; m.w. 1021.84; s.w.

lanthopine. $C_{30}H_{32}NO_4$; m.w. 343.20; cr.; m.p. 200; s.al.

lanum. Purified wool fat; used as ointment base, in cosmetics, leather dressing, rosin soaps.

lapis-lazuli. See lazurite.

Laplace equation. Linear differential equation of second order.

LaPorte rule. Even spectral terms, in dipole radiation, combine only with odd terms.

lappaconatine. $C_{34}H_{48}N_2O_8$, or $C_{32}H_{47}N_2O_8$; m.w. 612.39, or 598.34; hex. cr.; m.p. 205; s.w.; s.al.

larch extract. Tannin extract from bark of pinus larix; used in tanning leather.

lard (mutton tallow; suet). Crude fats obtained by rendering fatty portions of hogs, sheep and cattle.

lard, benzoinated. Lard treated with benzoin to retard rancidity; used in medicine.

lard oil. See oil, lard.

larkspur. See delphinium.

lastic. A substance having the physical properties of rubber at a particular temperature.

latent heat. The heat that must be applied to a substance in order to affect a change in state without a change in temperature; e.g. latent heat of fusion of ice-water is 80 calories/gm.

latent heat of evaporation (L_V). The heat required to change unit mass of a liquid to vapor at constant temperature.

latent heat of fusion. Quantity of heat absorbed when a unit mass of a solid is changed to a liquid at constant temperature.

latent heat of sublimation (L_s). Quantity of heat which is absorbed when a unit mass of solid is converted directly to vapor.

latent heat of transition. Heat which is absorbed or evolved in the transformation of one modification of a substance to another.

latex. All natural milky saps, usually referring to that of the hevae tree.

lattice. Configuration of points in space, representing relative positions of corresponding atomic, molecular, or ionic centers in the elementary cells or structure units of a crystal.

lattice constant. Distance between successive planes of a specified plane-family in a crystal.

lattice energy. Energy, dependent on arrangement of atoms in a crystal lattice, which changes when it is acted on by mechanical, electrical or other forces.

laubanite. A mineral, $Ca_2Al_2Si_3O_{16}\cdot 6H_2O$; wh., sp.gr. 2.23; hardness 4.5-5.0.

laudanidine (l-laudanine; tritopine). $C_{20}H_{25}NO_4$; m.w. 343.20; hex. pr. f.w. + al.; m.p. 166; i.w.; s.al.

dl-laudanine. $C_{20}H_{25}NO_4$; m.w. 343.20; sm. trim. ylsh. wh. pr.; m.p. 166; s.al.

l-laudanine. See laudanidine.

d-laudanosine. $C_{21}H_{27}NO_4$; m.w. 357.22; need. f. bz.; m.p. 89-90; i.w.; s.al.

laudanum (tincture of opium). Opium dissolved in dilute alcohol; brown; pain reliever, sleeping powder.

Laue equations. Three simultaneous equations that have to be satisfied for any intensity maximum of radiation diffracted by a crystal.

Laue pattern. See Laue photograph.

Laue photograph (Laue pattern). Photograph made by a heterogeneous beam of X Rays diffracted by a crystal; used in crystal analysis.

laughing gas. See nitrous oxide.

laumontite (leonhardite, caporcianite) A mineral, $CaO\cdot Al_2O_3\cdot 4SiO_2\cdot 4H_2O$, monocl., wh., yel., gray or red; sp.gr. 2.23-2.42; hardness 3-4.

laundry soda. Sesqui-carbonate of soda.

lauraldehyde (dodecanal). $CH_3(CH_2)_{10}CHO$; m.w. 184.19; col. leaf.; m.p. 44.5; b.p. 185 [100]; i.w.; s.al.

laurel camphor. See d-camphor.

laurel oil. See oil, laurel.

Laurent's acid. See 1-naphthylamine-5-sulfonic acid.

lauric acid (dodecanoic acid). $CH_3(CH_2)_{10}COOH$; m.w. 200.19; col. need. f.al.; m.p. 44; b.p. 225 [100]; i.w.; s.al.

lauric acid, amyl ester. $C_{11}H_{23}COOC_5H_{11}$; m.w. 270.26; col. liq. lt. straw; sp.gr. 0.858 [20]; b.p. 290-365.

lauric acid, benzyl ester. $C_{11}H_{23}COOCH_2C_6H_5$; m.w. 290.23; liq.; m.p. 8.5; b.p. 209-11 [12]; i.w.; s.al.

lauric acid, diethylene glycol ester, mono-. A light yellow oil, practically nonvolatile, nondrying and non-thickening; sp.gr. 0.940 at 25° C.; i.w.; s.al.; emulsifiable in water by alkalies; ingredient of paint and varnish removers; a lubricant; a plasticizer and softener for resins, waxes and rubber; a solvent for dyes for carbon paper, typewriter ribbons.

lauric acid, diglycol-. See diglycol laurate.

lauric acid, ethyl ester (ethyl dodecanoate; ethyl laurate). $CH_3(CH_2)_{10}COOC_2H_5$; m.w. 228.22; oil.; m.p. −10.7; b.p. 269; i.w.; s.al.

lauric acid, ethylene ester. See glycol, dilaurate.

lauric acid, p-phenylphenacyl ester. $CH_3(CH_2)_{10}COOCH_2COC_6H_4C_6H_5$; m.w. 394.27; m.p. 84.

lauric anhydride (dodecanoic anhydride. $(C_{11}H_{23}CO)_2O$; m.w. 382.36; col. cr.; m.p. 41; b.p. 166.

laurin. See glycerol, trilaurate.

laurionite. A mineral, $PbCl_2\cdot Pb(OH)_2$; rhomb., col.; sp.gr. 6.24; hardness 3.0-3.5.

laurite. See ruthenium sulfide.

laurone. See 12-tricosanone.

lauronitrile (dodecanenitrile; n-un-decyl cyanide). $CH_3(CH_2)_{10}CN$; m.w. 181.19; oil.; m.p. 4; b.p. 198 [100]; i.w.; s.al.

lauryl alcohol. See 1-dodecanol.

lauryl bromide. See dodecane, 1-bromo-.

lauryl chloride (dodecanoyl chloride). $CH_3(CH_2)_{10}COCl$; m.w. 218.64; col. liq.; m.p. −17; b.p. 145 [15]

lauryl ketone. See 12-tricosanone.

lautarite. See calcium iodate.

Lauth's violet. See thionine.

lava. A flow of igneous material poured out on the earth's surface by volcanic agencies.

lavender oil. See oil, lavender.

law, chemical. A generalization descriptive of a particular chemical phenomenon.

law of atmospheres. Law concerned with distribution of molecules in an ideal atmosphere acted on only by gravity and thermal agitation.

law of axes. Opposite ends of any one of the axes of a crystal are cut by the same number of similar faces arranged in a like way.

law of Dulong and Petit. See Dulong & Petit's law.

law of rectilinear diameter. The arithmetical average of the densities of a pure unassociated liquid and its saturated vapor is a linear function of the temperature.

law of uniform atomic plan. The electronic structural pattern of every atom is a recapitulation of the pattern of all atoms having fewer electrons.

lawrencite. See iron chloride(ous).

laws of motion. See Newton's laws of motion.

lawsonite. $CaO\cdot Al_2O_3\cdot 2SiO_2\cdot 2H_2O$; s.g. 3.1; a mineral.

lawsonia alba. See henna.

lazulite. A mineral, $(Fe,Mg)O\cdot Al_2O_3\cdot P_2O_5\cdot H_2O$; monocl., azure-blue; sp.gr. 3.057-3.122; hardness 5-6.

lazurite (lapis-lazuli). A mineral, $3Na_2O\cdot 3Al_2O_3\cdot 6SiO_2\cdot 2Na_2S$; cub., dk.-lt. bl., vlt. or grnsh. bl.; sp.gr. 2.38-2.45; hardness 5.0-5.5.

lea. A unit of yarn length; a 300-yd. hank of linen yarn; a skein used for strength tests, a skein containing 80 turns each 1.5 yd. in length.

leaching. Process of removing a soluble substance from a heterogeneous material by means of a solvent (usually water).

lead. Pb; at. wt. 207.21; cub. silv. bl.-wh. soft met.; s.g. 11.3437 [16]; radio Pb, 11.288 [20]; uran. Pb, 11.2960 [16]; m.p. 327.43; b.p. 1613; i.w.; used in the preparation of many alloys because of its softness, low melting point, and weight.

lead acetate. $Pb(C_2H_3O_2)_2\cdot 3H_2O$; m.w. 379.31; monocl. wh.; s.g. 2.55; m.p. 75; b.p. 280; s.w.; i.al.

lead acetate. $Pb(C_2H_3O_2)_2\cdot 10H_2O$; m.w. 505.42; rhomb. cr.; s.g. 1.69; m.p. 22; s.w.; i.al.

lead acetate, basic. $Pb(C_2H_3O_2)_2\cdot Pb(OH)_2\cdot H_2O$; m.w. 584.52; monocl. wh.; s.w.; s.al.

lead acetate, basic. $Pb(C_2H_3O_2)_2\cdot 2Pb(OH)_2$; m.w. 807.74; wh. micr. need.; s.w.; s.al.

lead acetate, basic. $Pb_3(C_2H_3O_2)_4OH$; m.w. 608.52; wh.; s.w.; s.al.

lead acetate, monobasic (lead subacetate). $Pb_2O(CH_3COO)_2$; m.w. 548.49; white powder; s.w.; s.al.; used in chemical processes and in medicine.

lead acetate, sub-. See lead acetate, monobasic.

lead antimonate. $Pb_3(SbO_4)_2$; m.w. 993.18; or.-yel. powd.; sp.gr. 4.60-4.76. i.w.; pigment, in pottery manufacture, and in staining glass.

lead antimoniate. See lead antimonate.

lead arsenate, meta-. $Pb(AsO_3)_2$; m.w. 453.08; hex. tabl.; s.g. 6.42 [15].

lead arsenate, ortho-. $Pb_3(AsO_4)_2$; m.w. 899.52; wh. cr.; s.g. 7.30; m.p. 1042; s.w.

lead arsenate, ortho-, di-. $PbHAsO_4$; m.w. 347.16; monocl. leaf; s.g. 5.79; i.w.

lead arsenate, ortho-, mono-. $PbH_4(AsO_4)_2$; m.w. 489.11; tricl.; s.g. 4.46 [15].

lead arsenate, pyro-. $Pb_2As_2O_7$; m.w. 676.30; rhomb.; s.g. 6.85; m.p. 802; i.w.

lead arsenite, meta-. $Pb(AsO_2)_2$; m.w. 421.08; wh. powd.; i.w.

lead azoimide. PbN_6; m.w. 291.27; cryst.; s.g.; s.w.

lead benzoate. $Pb(C_7H_5O_2)_2\cdot H_2O$; m.w. 467.31; wh. cr. powd.; s.w.

lead, black. See carbon, graphite.

lead borate, meta-. $Pb(BO_2)_2\cdot H_2O$; m.w. 310.88; cr. wh. powd.; s.g. 5.598; anh.; b.p. $-H_2O$ 160; i.w.

lead bromate. $Pb(BrO_3)_2\cdot H_2O$; m.w. 481.07; monocl. col.; s.g. 5.53.

lead bromide. $PbBr_2$; m.w. 367.05; rhomb. wh.; s.g. 6.66; m.p. 373; b.p. 916; i.al.

lead burning. Old name for lead welding by oxy-hydrogen flame.

lead carbonate. $PbCO_3$; m.w. 267.22; rhomb. col.; s.g. 6.6; i.al.

lead carbonate (mineral). See cerussite.

lead carbonate, basic (white lead, hydrocerussite). $2PbCO_3\cdot Pb(OH)_2$; m.w. 775.68; hex. wh. amor. powd.; s.g. 6.14; i.w.

lead carbonate, sub. See lead carbonate, basic.

lead chlorate. $Pb(ClO_3)_2$; m.w. 374.13; monocl. wh.; s.g. 3.89; s.w.; s.al.

lead chlorate (hydrated). $Pb(ClO_3)_2\cdot H_2O$; m.w. 392.15; monocl. wh., deliq.; s.g. 4.037; s.w.; s.al.

lead chlorate, per-. $Pb(ClO_4)_2\cdot 3H_2O$; m.w. 460.18; rhomb.; s.g. 2.6; s.w.; s.al.

lead chloride (cotunnite). $PbCl_2$; m.w. 278.13; rhomb. wh.; s.g. 5.85; m.p. 501; b.p. 950; i.al.

lead chloride, tetra-. $PbCl_4$; m.w. 349.05; yel. oily liq.; s.g. 3.18°; m.p. −15.

lead chlorite. $Pb(ClO_2)_2$; m.w. 342.13; monocl. yel.; s.w.

lead chromate (crocoite). $PbCrO_4$; m.w. 323.23; monocl. yel.; s.g. 6.3; m.p. 844; i.w.

lead chromate, basic (chrome red). $PbCrO_4\cdot PbO$; m.w. 546.45; red. cr. powd.; i.w.

lead chromate, di-. $PbCr_2O_7$; m.w. 423.24; red cr.

lead citrate. $Pb_3(C_6H_5O_7)_2\cdot 3H_2O$; m.w. 1053.78; wh. cr. powd.; s.w.

lead cyanate. $Pb(CNO)_2$; m.w. 291.24; wh. need.; i.w.

lead cyanide. $Pb(CN)_2$; m.w. 259.24; yelsh.-wh. pois. powd.; s.w.

lead dithionate. $PbS_2O_6\cdot 4H_2O$; trig. s.g. 3.22; s.w.

lead drier. Compound of lead and an organic acid used for hastening drying of paints, e.g. lead linoleate.

lead ferricyanide. $Pb_3[Fe(CN)_6]_2\cdot 6H_2O$; m.w. 1153.53; red cr.; s.w.

lead ferrocyanide. $Pb_2Fe(CN)_6\cdot 3H_2O$; m.w. 680.37; yelsh.-wh. powd.; i.w.

lead fluoride. PbF_2; m.w. 245.22; col. s.g. 8.24; m.p. 855; b.p. 1290.

lead fluosilicate. $PbSiF_6\cdot 2H_2O$; m.w. 385.31; monocl. col.; s.w.

lead formate. $Pb(CHO_2)_2$; m.w. 297.24; rhomb. wh. lust.; s.g. 4.63; m.p. d. 190; s.w.; i.al.

lead, hexaethyldi- (hexaethyldiplumbane; diplumbic hexaethyl; lead triethide). $Pb_2(C_2H_5)_6$; m.w. 588.67; liq.; i.w.

lead hydroxide. $Pb(OH)_2$; m.w. 241.24; wh. amor.; s.w.

lead hydroxide (hydrated). $2PbO\cdot H_2O$; m.w. 464.46; cub. or wh. amor. powd. s.g. 7.592; s.w.

lead iodate. $Pb(IO_3)_2$; m.w. 557.06; wh.

lead iodide. PbI_2; m.w. 461.06; hex. yel. powd.; s.g. 6.16; m.p. 402; b.p. 954; i.al.

lead iodate, per-. $PbHIO_6$; m.w. 415.15; cryst.; i.w.

lead iodate, per- (hydrated). $PbHIO_6\cdot H_2O$; amor.; m.p. $-H_2O$ 110; i.w.

lead laurate. $Pb(C_{12}H_{23}O_2)_2$; m.w. 605.58; m.p. 104.7; s.w.; s.al.

lead linoleate (lead plaster). $Pb(C_{18}H_{31}O_2)_2$; m.w. 765.72 yel.-wh. paste; used in medicine, inks, paint and varnish driers.

lead molybdate. $PbMoO_4$; m.w. 367.22; yel. powd.; i.w.; i.al.

lead myristate. $Pb(C_{14}H_{27}O_2)_2$; m.w. 661.64; m.p. 108.7; s.w.; s.al.

lead β-naphthalenesulfonate. $Pb(C_{10}H_7SO_3)_2$; m.w. 621.45; wh. cr. powd. pois.; i.w.; s.al.

lead naphthenate. Amber colored sticky plastic solid used as a paint and enamel drier, and in extreme pressure lubricants.

lead nitrate. $Pb(NO_3)_2$; m.w. 331.24; cub. or monocl. col.; s.g. 4.53 [20]; s.w.

lead nitrate, basic. $2PbO\cdot N_2O_5\cdot H_2O$; rhomb. cr.; s.g. 5.93; s.w.

lead oleate. $Pb(C_{18}H_{33}O_2)_2$; m.w. 769.76; white, ointment-like granules; i.w.; s.al.; used in lacquers and paint driers.

lead oxalate. PbC_2O_4; m.w. 295.22; heavy wh. powd.; s.g. 5.28; m.p. d. 300; i.w.; i.al.

lead oxide (mineral). See litharge.

lead oxide, di- (plattnerite). PbO_2; m.w. 239.22; tetr. br.; s.g. 9.375; i.w.; i.al.

lead oxide, mono- (litharge). PbO; m.w. 223.22; tetr. yel.; s.g. 9.53; m.p. 888.

lead oxide, mono- (massicotite). PbO; rhomb. yel.; s.g. 8.0; i.w.

lead oxide, per-. See lead oxide, di-.

lead oxide, sesqui-. Pb_2O_3; m.w. 462.44; amor. or powd.; i.w.

lead oxide, sub-. Pb_2O; m.w. 430.44; amor. blk.; m.w. 8.342; i.w.

lead oxide, yellow. See lead oxide, mono-.

lead oxychloride (matlockite). $PbCl_2\cdot PbO$; m.w. 501.35; tetr. wh.; s.g. 7.21; i.w.

lead oxychloride (mendipite). $PbCl_2\cdot 2PbO$; m.w. 724.57; rhomb. yel. s.g. 7.08; m.p. 693; i.w.

lead oxychloride. $PbCl_2\cdot 3PbO$; m.w. 947.79; yel.

lead oxychloride (cossel yellow). $PbCl_2\cdot 7PbO$; m.w. 1840.67; yel. cr., or powd. i.w.

lead palmitate. $Pb(C_{16}H_{31}O_2)_2$; m.w. 717.20; m.p. 112.3; s.w.; i.al.

lead phosphate, meta-. $Pb(PO_3)_2$; m.w. 365.26; col.; m.p. 800; s.w.
lead phosphate, ortho-. $Pb_3(PO_4)_2$; m.w. 811.70; hex. col. or wh. powd.; i.w.
lead phosphate, pyro-. $Pb_2P_2O_7$; m.w. 588.48; rhomb. wh.; s.g. 5.8; m.p. 824; i.w.
lead phosphate, pyro-. $Pb_2P_2O_7 \cdot H_2O$; m.w. 606.50; rhomb.; m.p. 806 anh.; i.w.
lead phosphite. $PbHPO_3$; m.w. 287.25; wh. powd.; i.w.
lead, pig. See pig lead.
lead plaster. See lead linoleate.
lead red (minium). Pb_3O_4; m.w. 685.66; cr. sc. or red amor. powd.; s.g. 9.1; i.w.; i.al.
lead resinate. $Pb(C_{20}H_{29}O_2)_2$; m.w. 809.68; a yellowish white paste; paint and varnish drier, waterproofs textiles.
lead selenide (clausthalite). PbSe; m.w. 286.42; cub.; s.g. 8.10^{15}; m.p. 1065; i.w.
lead silicate. $PbSiO_3$; m.w. 283.23; wh. cr. powd.; s.g. 6.49; m.p. 766; i.w.
lead stearate. $Pb(C_{18}H_{35}O_2)_2$; m.w. 773.77; wh. powd.; m.p. 115.7; s.w. i.al.
lead sulfate (anglesite). $PbSO_4$; m.w. 303.28; monocl. or rhomb. wh.; s.g. 6.2; i.al.
lead sulfate, acid. $Pb(HSO_4)_2 \cdot H_2O$; m.w. 419.37; cryst.
lead sulfate, basic (lanarkite). $PbSO_4 \cdot PbO$; m.w. 526.50; monocl. wh.; s.g. 6.92; m.p. 977; s.w.
lead sulfate, per-. $PbS_2O_8 \cdot 3H_2O$. m.w. 453.39; deliq.; s.w.
lead sulfide (galena). PbS; m.w. 239.28; cub. bl. metallic; s.g. 7.5; m.p. 1114; i.w.; i.al.
lead sulfite. $PbSO_3$; m.w. 287.28; wh.; i.w.
lead sulfite, hypo-. See lead thiosulfate.
lead sulfochloride. $3PbS \cdot PbCl_2$; m.w. 995.97; red; i.w.
lead sulfocyanide. See lead thiocyanate.
lead tartrate. $PbC_4H_4O_6$; m.w. 355.25; wh. cr. powd.; i.w.; i.al.
lead, tetraethyl- (lead tetraethide). $Pb(C_2H_5)_4$; m.w. 323.38; col. liq.; b.p. 198-202; i.w.; s.al.
lead, tetramethyl- (tetramethylplumbane; lead tetramethyl). $Pb(CH_3)_4$; m.w. 267.31; col. liq.; m.p. −27.5; b.p. 110; i.w.; s.al.
lead, tetraphenyl- (tetraphenylplumbane). $(C_6H_5)_4Pb$; m.w. 515.38; wh. need.; m.p. 227.7.
lead thiocyanate. $Pb(CNS)_2$; m.w. 323.36; monocl. wh.; s.g. 3.82; s.w.
lead thiosulfate. PbS_2O_3; m.w. 319.34; wh. cr.; s.g. 5.18.
lead triethide. See lead, hexaethyldi-.
lead tungstate (raspite). $PbWO_4$; m.w. 455.22; monocl. col.; m.p. 1123; i.al.
lead tungstate (stolzite). $PbWO_4$; m.w. 455.22; tetr.; s.g. 8.23; i.w.
lead vanadate, meta-. $Pb(VO_3)_2$; m.w. 405.12; yel. powd.; i.w.
leadhillite. A mineral, $Pb(OH)_2 \cdot PbSO_4 \cdot 2PbCO_3$; monocl.; sp.gr. 6.26-6.44; hardness 2.5.
leafing. Formation of a continuous brilliant film by flakes of metallic powder.
lean. Non-plastic; not having desired yield value.
lease. Crossing of warp threads in preparing them for looms.
least-action principle. The action involved, in a dynamic system passing spontaneously and without any total energy change from one configuration to another is a minimum.
least-energy principle. A dynamic system is in stable equilibrium only for arrangements in which the total potential energy of the system has minimum values.
least mechanical equivalent of light. One lumen at the wave-length of maximum visibility (0.556 μ) equals 0.00161 watts; one watt at the same wave length equals 621 lumens.
least molecular deformation, rule of. The decomposition, of a substance, by heat will follow that reaction which requires the least possible deformation of the molecule.
least squares principle. Best estimate of an experimental value, that can be deduced from a number of observations, is that for which the sum of the weighted squares of the residuals is smallest.
leather, artificial. Material made by coating fabric with a dope (mixture of pyroxylin, castor oil, pigments and solvent); substitute for leather.
lecanoric acid, monomethyl ether. See evernic acid.
lechatelierite. See silicon oxide di-.
LeChatelier's principle. If a change is made in the pressure, temperature or concentration of a system in a mobile chemical equilibrium, the equilibrium will be displaced in such a direction as to oppose the effect of this change.
Lecher oscillator. Arrangement for making a system of standing waves in two parallel wires (Lecher wires).
lecithin. Esters of oleic, stearic, palmitic, and other fatty acids with glycerophosphoric acid and choline, occurring in egg yolk, brain and nerve tissue; i.w.; s.al.; used in paint formulation, cosmetics, and chocolate coatings.
Lederer's theory. Thermodynamical conception of theory of viscosity.
Leduc's rule. The volume occupied by a gas mixture is equal to the sum of the volumes occupied separately by each constituent at the same temperature and pressure as the mixture.
legs. Tension filaments which appear between two adhering frictioned fabric plies as they are pulled apart.
legumin (vegetable casein). The distinctive nutritive protein of peas, beans and lentils.
lehr. Oven used for annealing glass by slow cooling.
lemon grass oil. See oil, lemon grass.
lemon oil. See oil, lemon.
Lenard rays. Cathode rays that have passed thru a thin metallic foil or "window" in a vacuum tube.
length (long). Characterization of plastic substances having a small yield value and low mobility, e.g. gluten; an expression used to indicate the proportion of oil in a varnish.
lenticular. Lens-shaped.
Lenz's law. The direction of an induced current is such that its magnetic field tends to oppose the change in strength of the magnetic field which is setting up the induced electromotive force.
leonhardite. See laumontite.
lepidine (4-methylquinoline). $CH_3C_9H_6N$; m.w. 143.08; col. liq.; m.p. <0; b.p. 258-63; s.w.; s.al.
lepidine, 2-(p-aminophenyl). See flavaniline.
lepidocrocite. A mineral, $Fe_2O_3 \cdot H_2O$; rhomb., sp.gr. 4.09.
lepidolite (lithium mica). A mineral, $KLi[Al(OH,F)_2]Al(SiO_3)_3$; monocl., pink, oft. wh.-gray or vlt.; sp.gr. 2.799-2.9; hardness 2.5-4.0.
2 (1)-lepidone. See carbostyril, 4-methyl-.
lepometer. A device for comparing viscosity of two liquids simultaneously under similar conditions.
leptandra (culver's root; black root). A preparation from dried rhizome and roots of veronica virginica; a cathartic.
mp-leucaniline (m, p', p''-methenyltrianiline; m, p', p''-triaminotriphenylmethane; 3, 4', 4''-triaminotritan; pseudoleucaniline). $CH(C_6H_4NH_2)_3$; m.w. 289.17; rosettes f.et.; m.p. 150; i.w.; s.al.
op-leucaniline (o, p', p''-methenyltrianiline; o, p, p''-triaminotriphenylmethane; 2, 4', 4''-triaminotritan). $CH(C_6H_4NH_2)_3$; m.w. 289.17; col. cr. f.al.; m.p. 165; s.w.; s.al.
p-leucaniline (paraleucaniline; p, p', p''-methenyltrianiline; p, p', p''-triaminotriphenylmethane; 4, 4', 4''-triaminotritan). $CH(C_6H_4NH_2)_3$; m.w. 289.17; col. leaf. f.w.; m.p. 148; i.w.; s.al.
p-leucaniline, n, n, n', n'-tetramethyl- (4-amino-4', 4''-bisdimethylaminotriphenylmethane). $[(CH_3)_2NC_6H_4]_2CHC_6H_4NH_2$; m.w. 345.23; glit. cr.f.al.; m.p. 151-2; s.al.
leucaurin (p, p', p''-methenyltriphenol; leucoaurin). $CH(C_6H_4OH)_3$; m.w. 292.12; col. need. f.ac.a.; s.w.; s.al.
l-leucic acid (2-hydroxy-4-methylpentanoic acid; α-hydroxyisocaproic acid, leucinic acid). $(CH_3)_2CHCH_2CHOHCOOH$; m.w. 132.09; need. or pl. f.et. + pet. eth.; m.p. 72.5; s.w.; s.al.
dl-leucine (dl-α-aminoisocaproic acid). $(CH_3)_2CHCH_2CH(NH_2)COOH$; m.w. 131.11; leaf. f.w.
l-leucine (l-2-amino-4-methylpentanoic acid; l-α-aminoisocaproic acid). $(CH_3)_2CHCH_2CH(NH_2)COOH$; m.w. 131.11; hex. col. leaf. f.w.; m.p. 295.
leucite (amphigene). A mineral, $K_2O \cdot Al_2O_3 \cdot 4SiO_2$; cub., wh., gray; sp.gr. 2.45-2.51; hardness 5.5-6.0.
leuco base. Colored benzenoid derivative of triphenyl methane, convertable to a colored quinonoid salt (dyestuff) by dissolving in acid and heating with an oxidizing agent.
leucocyte. White blood corpuscle.
leucoindigo. See indigo white.
leucoline. See isoquinoline.
leucomalachite green. See aniline, p, p'-benzalbis-n, n-dimethyl-.
leucopyrite. See löllingite.
leucosin. Albumin found in wheat kernel.
Leukon. An acrylate resin, thermoplastic, available in colored and colorless transparent forms
Leukorit. Synthetic tar-acid resin.
Leuna gas. Propane compressed for use as fuel.
leveling. Ability of a coating to form a smooth level film, on either a horizontal or vertical surface, independent of the method of application.
leveling agent. A substance added to paints to aid leveling.
levigation. Grinding of a substance in a liquid; rough segregation of differently sized particles suspended in a fluid.
levisticum. See lovage.
levogyrate. See levorotatory
levorotatory. Rotating polarized light to the left.
levulin (synthetic) (fructosin; levulosin). $(C_6H_{10}O_5)_x$; m.w. $(162.08)_x$; deliq. amor.; s.w.; s.al.
levulinaldehyde (4-oxopentanal; levulinic aldehyde; γ-ketovaleraldehyde). $CH_3COCH_2CH_2CHO$; m.w. 100.06; m.p. < −21; s.w.; s.al.
levulinic acid (4-oxopentanoic acid; γ-ketovaleric acid; acetopropionic acid). $CH_3COCH_2CH_2COOH$; m.w. 116.06; col. leaf.; m.p. 37.2; b.p. 246; s.w.; s.al.
levulinic acid, amyl ester. $CH_3 \cdot CO \cdot (CH_2)_2COOC_5H_{11}$; m.w. 186.130; colorl. liq. sp.gr. .96136; b.p. 253.4; s.w.; a high boiling solvent and softener used in manufacture of nitrocellulose and cellulose acetate lacquers.
levulinic acid, butyl ester. $CH_3 \cdot CO \cdot (CH_2)_2 \cdot COOC_4H_9$; m.w. 172.110; sp.gr. .97353; b.p. 237.8; s.w.
levulinic acid, ethyl ester. $CH_3CO(CH_2)_2COOC_2H_5$; m.w. 144.09; col. liq.; b.p. 205.2^{766}; s.w.; s.al.
levulose. See d-fructose.
levulosin. See levulin (synthetic).
lewisite. A mineral, $5CaO \cdot 2TiO_2 \cdot 3Sb_2O_5$; cub., yel.; sp.gr. 4.950; hardness 5.5.
Lewisol. Modified alkyd or phenolic resin.
ley. See lye.
Leyden blue. See cobalt aluminate.
Leyden temperature scale. Low temperature centigrade thermometry scale based on a boiling point of hydrogen equal to −252.74° C, and of oxygen equal to −182.95° C.
libethenite. $Cu_2P_2O_8 \cdot Cu(OH)_2$; s.g. 3.6-3.8; dr. grn. mineral.
licareol, esters. See under l-linaloöl.
lichen. Thallophytic plant; may be used for food and dyeing.
lichenin (moss starch). $(C_6H_{10}O_5)_x$; m.w. $(162.08)_x$; wh. amor. powd.; s.w.; i.al.
Lichtenberg figure. Pattern produced by sifting a fine powder on a dielectric surface, non-uniformly electrified.
licorice. See glycyrrhiza.
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licorice. See glycyrrhiza.

l-linaloöl, formate (l-linalyl formate). $HCOOC_{10}H_{17}$; m.w. 182.14; b.p. 100-3 [10]; i.w.; s.al.

linalyl acetate. See l-linaloöl, acetate.

linalyl esters. See under linaloöl.

linarite. $(Pb,Cu)SO_4 \cdot (Pb,Cu)(OH)_2$; deep blue mineral.

Lindol. See tolyl phosphate.

line density. Mass per unit length of a long thin body.

line interval. Frequency difference between two adjacent lines in a spectral series.

line of force. A line in a magnetic or electrostatic field such that its direction at every point is the same as the direction of the force which would act on a small positive charge (or pole) placed at that point; also a unit of flux or field intensity when the lines are so distributed that the number of lines intersecting a unit area at right angles equals the flux.

line spectrum. See spectrum, line.

linear molecule. Term applied generally to polymers with straight chains; a highly elongated molecule.

linkage, non-polar. Sharing of a pair of electrons by two atoms.

linkage, odd electron. See singlet linkage.

linkage, polar. See polar linkage.

linkage, singlet. See singlet linkage.

linnaeite (cobalt pyrites). Co_3S_4 and $(CoNi)_3S_4$; s.g. 4.8-5; steel-gr.; source of Co and Ni.

linoleic acid (9, 12-octadecadienoic acid; linolic acid). $C_{18}H_{32}O_2$; m.w. 280.25; col.-yel. oil.; m.p. −11; b.p. 230 [16]; i.w.; s.al.

linoleic acid, ethyl ester (ethyl linoleate; ethyl linolate). $C_{17}H_{31}COOC_2H_5$; m.w. 308.28; col.-yel. oil; b.p. 270-5 [760]; i.w.; s.al.

linoleic acid, methyl ester (methyl linolate). $C_{17}H_{31}COOCH_3$; m.w. 294.27; col.-yel. oil; b.p. 207-8 [15]; i.w.; s.al.

linoleic acid, tetrabromide. See stearic acid, $\theta, \iota, \lambda, \mu$-tetrabromo-.

linolein. Glyceride of linoleic acid; a drying factor of linseed oil.

α-linolenic acid, hexabromide. See stearic acid, $\theta, \iota, \lambda, \mu, \xi, \omega$-hexabromo-.

α-linolenic acid (9, 12, 15-octadecatrienoic acid [one form]). $C_{17}H_{29}COOH$; m.w. 278.23; col. liq.; b.p. 230-2 [17]; i.w.; s.al.

linolenic acid, ethyl ester. $C_{17}H_{29}COOC_2H_5$; m.w. 306.27; oil.; b.p. 123-33 [4]; i.w.; s.al.

linoleum. A floor covering made by coating canvas with hot oxidized linseed oil, rosin, powdered cork and pigments.

linoxylin. Tough elastic product formed when linseed oil dries.

linseed (flaxseed; linum). Ripe seeds of linum usitatissimum; source of linseed oil, also used medicinally.

linseed meal. Ground linseed cake used as a cattle food.

linseed oil. See oil, linseed.

linseed oil, boiled. See oil, boiled.

linseed oil, sulfurated and terebinthinated. See oil, Haarlem.

linters. Short fleecy fibers adhering to cotton seed after one ginning.

Lintner value. The diastatic measure of the hydrolysis of starch to maltose.

linum. See linseed.

Liouville theorem. The number of particles per unit volume in any representative group of particles, in a conservative system of particles, remains constant as the particles move.

lipase. An enzyme which hydrolyses fats and oils.

lipase, pancreatic. See steapsin.

lipide. See lipin.

lipin (lipoid; lipide). Substances resembling fats, and extracted with fats from various tissues, many yielding fatty acids on hydrolysis, but in addition compounds containing nitrogen or phosphorus, e.g. lecithin.

lipochrome (cartinoid). Highly colored substance constituting the yellow and red pigments of fats and plant and animal tissues.

lipoid. See lipin.

lipochrome. Fat soluble pigment in plants and animals, e.g. cartenoids.

lipolytic. Capable of hydrolysing fats, oils, or waxes. See steatolytic.

Lipowitz alloy. A eutectic fusible alloy; bismuth 50, lead 27, tin 13, and cadmium 10; m.p. 70-4° C.

lipoxanthin. A plant and animal pigment, soluble in fat, insoluble in water and easily destroyed by light and oxygen.

Lippman effect. Effect produced by a potential difference on the common surface tension of two immiscible liquid electrolytes.

liquation. The separation of an alloy on heating.

liquid. That state of a substance in which it undergoes continuous deformation under a shearing stress.

liquid air. Air below −189° C, milky or bluish transparent liquid, source of oxygen and nitrogen.

liquid amber orientalis. See styrax.

liquid, associated. See associated liquid.

liquid, complex. Substance in which rate of shear is not proportional to shearing stress.

liquid crystal (mesomorphic). A phase between definite crystal and liquid exhibited by certain organic substances. They melt at a definite temperature to form a cloudy viscous liquid (liquid crystal) having anisotropic properties and becoming clear at higher temperatures, e.g. ammonium oleate and cholesteryl acetate.

liquid limit. Smallest water content at which a soil shows liquid instead of plastic properties.

liquid paraffin. See mineral oil.

liquid petrolatum. See mineral oil.

liquid rubber. See latex.

liquid, simple. Substance in which rate of shear is proportional to shearing stress.

liquidity, coefficient of. The reciprocal of the coefficient of viscosity or internal friction.

liquidus curve. Curve of continuous change in temperature with composition in which primary phase first crystallizes from a melt.

liquidus factor. Fictitious valence.

liquidus temperature. Temperature at which crystallization begins on cooling and melting is complete on heating.

Lissajou's figures. The variety of characteristic curves described by a particle which is simultaneously displaced by two simple harmonic motions at right angles, when the periods of the two motions are in the ratio of two small whole numbers.

liter (litre; L.; l.). The volume of a kilogram of water at 4° C., equal to 1000 cubic centimeters.

litharge. See lead oxide, mon-.

lithiophyllite. See triphylite.

lithium. Li; at. wt. 6.940; cub. silv. wh. soft met.; s.g. 0.534; m.p. 186, b.p. 1336; lightest of the solid elements, the first of the alkaline metal series.

lithium acetate. $LiC_2H_3O_2 \cdot 2H_2O$; m.w. 101.99; rhomb. wh.; m.p. 70; s.w.; s.al.

lithium acetylsalicylate. $LiC_9H_7O_4$; m.w. 185.99; sl. hyg. powd.; d. in moist air; s.w.; s.al.

lithium amide. $LiNH_2$; m.w. 22.96; cub. col.; s.g. 1.178; m.p. 390; b.p. 430.

lithium arsenate, ortho-. $Li_3AsO_4 \cdot H_2O$; m.w. 177.77; wh. powd.; s.w.

lithium benzoate. $LiC_7H_5O_2$; m.w. 127.98; wh. cr. or powd.; s.w.; s.al.

lithium borate, meta-. $LiBO_2$; m.w. 49.76; wh. powd.; s.w.

lithium borate, tetra-. $Li_2B_4O_7 \cdot 5H_2O$; m.w. 259.24; s.w.; i.al.

lithium bromide. LiBr; m.w. 86.86; cub. wh. deliq.; s.g. 3.464 [25]; m.p. 547; b.p. 1265; s.w.; s.al.

lithium carbide. Li_2C_2; m.w. 37.88; or. or wh. powd.; s.g. 1.65 [18].

lithium carbonate. Li_2CO_3; m.w. 73.88; s.g. 2.111 [17.5]; m.p. 618; i.al.

lithium carbonate, acid (bicarbonate). $LiHCO_3$; m.w. 67.95; wh.

lithium chlorate. $LiClO_3 \cdot \frac{1}{2}H_2O$; m.w. 99.40; tetra., deliq.; m.p. 65; b.p. $-\frac{1}{2}H_2O$ 90; s.w.; s.al.

lithium chlorate, per-. $LiClO_4$; m.w. 106.40; col., deliq.; s.g. 2.429; m.p. 236; s.w.; s.al.

lithium chlorate, per- (hydrated). $LiClO_4 \cdot 3H_2O$; m.w. 160.44; hex. col., s.g. 1.841; m.p. 45; b.p. $-2H_2O$ 100, $-3H_2O$ 150; s.w.; s.al.

lithium chloride. LiCl; m.w. 42.40; cub. wh., deliq.; s.g. 2.068 [25]; m.p. 613; b.p. 1353; s.w.

lithium chloroplatinate. $Li_2PtCl_6 \cdot 6H_2O$; m.w. 529.95; hex. or red, deliq.; b.p. $-6H_2O$ 180; s.w.; s.al.

lithium chromate. $Li_2CrO_4 \cdot 2H_2O$; m.w. 165.92; rhomb. or.-yel., deliq.; b.p. $-2H_2O$ 150; s.w.

lithium chromate, di-. $Li_2Cr_2O_7 \cdot 2H_2O$; m.w. 265.93; blk.-br., deliq.; m.p. $-2H_2O$ 130; s.w.

lithium citrate. $Li_3C_6H_5O_7 \cdot 4H_2O$; m.w. 281.92; col. cr. or wh. powd., deliq. s.w.; s.al.

lithium fluoride. LiF; m.w. 25.94; cub. col.; s.g. 2.295 [2.4]; m.p. 870; b.p. 1676; i.al.

lithium fluosilicate. $Li_2SiF_6 \cdot 2H_2O$; m.w. 191.97; monocl. wh.; s.g. 2.33 [12]; m.p. $-2H_2O$ 100; s.w.; s.al.

lithium formate. $LiCHO_2 \cdot H_2O$; m.w. 69.96; rhomb. col.; s.g. 1.46; s.w.

lithium germanate, meta-. Li_2GeO_3; m.w. 134.48; monocl.; s.g. 3.53 [18]; m.p. 1239.

lithium hydride. LiH; m.w. 7.93; col.; s.g. 0.82; m.p. 680.

lithium hydroxide. LiOH; m.w. 23.95; wh. cr. or powd.; s.g. 2.54; m.p. 450; s.w.; s.al.

lithium hydroxide. $LiOH \cdot H_2O$; m.w. 41.96; monocl. col.; s.w.; s.al.

lithium iodide. LiI; m.w. 133.86; cub. wh., deliq.; s.g. 4.061 [26]; m.p. 445; b.p. 1190; s.w.; s.al.

lithium iodide (hydrated). $LiI \cdot 3H_2O$; m.w. 187.91; monocl. col.-yelsh.; s.g. 3.48; m.p. 73, $-H_2O$ 73; b.p. $-2H_2O$ 80, $-3H_2O$ 300; s.w.

lithium lactate. $LiC_3H_5O_3$; m.w. 96.98; wh. cr. powd.; s.w.

lithium laurate. $LiC_{12}H_{23}O_2$; m.w. 206.12; m.p. 229.5; s.w.; s.al.

lithium mica. See lepidolite.

lithium myristate. $LiC_{14}H_{27}O_2$; m.w. 234.15; m.p. 223.9; s.w.; s.al.

lithium nitrate. $LiNO_3$; m.w. 68.95; trig. col. deliq.; s.g. 2.38; m.p. 255; s.w.

lithium nitrate (hydrated). $LiNO_3 \cdot 3H_2O$; m.w. 122.99; col.; m.p. 29.88 $-2\frac{1}{2}H_2O$; b.p. $-3H_2O$ 61.1; s.w.

lithium nitrite. $LiNO_2 \cdot H_2O$; m.w. 70.96; flat need.; s.g. 1.615°; m.p. <100; s.w.

lithium oxalate. $Li_2C_2O_4$; m.w. 101.88 col. cr.; s.g. 2.121 [17.5]; s.w.

lithium oxalate, acid. $LiHC_2O_4 \cdot H_2O$; m.w. 113.96; s.w.

lithium oxide. Li_2O; m.w. 29.88; wh. cr.; s.g. 2.013 [18.5]; m.p. >1700; s.w.

lithium palmitate. $LiC_{16}H_{31}O_2$; m.w. 262.18; m.p. 224.5; s.w.; s.al.

lithium phosphate. Li_3PO_4; m.w. 115.8 rhomb. col.; s.g. 2.537 [17.5]; m.p. 83

lithium phosphate, ortho-. $2Li_3PO_4 \cdot H_2O$; m.w. 249.70; wh. cr. powd s.g. 2.41.

lithium salicylate. $LiC_7H_5O_3$; m.w. 143.98 wh. powd., deliq.; s.w.; s.al.

lithium silicate. Li_2SiO_3; m.w. 89.9 rhomb. col.; s.g. 2.52; m.p. 1201; s.w.

lithium silicate. Li_4SiO_4; m.w. 119.8 rhomb. col.; s.g. 2.28; m.p. 1256; s.w.

lithium silicide. Li_4Si_5; m.w. 97.7 bl. cr.; s.g. 1.12.

lithium stearate. $LiC_{18}H_{35}O_2$; m.w. 290.21; m.p. 221.0; s.w.; s.al.

lithium sulfate. Li_2SO_4; m.w. 109.9 monocl. col.; s.g. 2.221; m.p. 860; s.w.

lithium sulfate (hydrated). $Li_2SO_4 \cdot H_2O$; m.w. 127.96; monocl. col.; s.g. 2.06; m.p. $-H_2O$ 130; s.w.

lithium sulfate, acid. $LiHSO_4$; m.w. 104.01; pr.; s.g. 2.123 [4]; m.p. 12

lithium sulfide. Li_2S; m.w. 45.94; cu wh.-yel.; s.g. 1.66; s.w.; s.al.

lithium sulfite. $Li_2SO_3 \cdot H_2O$; m.w. 111.96; need.; b.p. $-H_2O$ 180-20 s.w.; i.al.

lithium tartrate. $Li_2C_4H_4O_6 \cdot H_2O$; m.w. 179.93; wh. cr. powd.; s.w.

lithium thallium di- tartrate. $TlLi(C_4H_4O_6 \cdot 2H_2O)$; m.w. 395.39; tr. s.g. 3.144.

lithium thiocyanate. LiSCN; m.w. 65.0 deliq., wh. cr.; s.w.

lithium tungstate. Li_2WO_4; m.w. 261.8 trig. col.; m.p. 742; s.w.; i.al.

lithium urate. $LiHC_5H_3N_4O_3$; m.w. 174.00; wh. powd.; s.w.; s.al.

lithium vanadate, meta-. $LiVO_3 \cdot 2H_2O$; m.w. 141.92; yelsh. powd.; s.w.

Lithocorn. Synthetic tar-acid resin.

lithofellic acid (lithofellinic acid). $C_{20}H_{32}O_4$; m.w. 340.28; micr. c m.p. 206; i.w.; s.al.

lithographic stone. A fine-grained lim stone of uniform texture; used printing. See lithography.

lithography. A method of print employing a certain type of calcare stone on which the design or charact are described in a greasy ink, remaining surface being moiste with water. Ink from the rollers absorbed only by the greasy portio an impression of which is taken by paper.

lithopone (lithophone; Orr's wh Charlton white; Griffith's whi An equimolecular mixture of z sulfide and barium sulfate prepared coprecipitation; wh. cryst. po sp.gr. 4.30; used as a paint pigme in cosmetics, as filler in textiles, rubb etc.

lithosphere. The solid portion of earth's exterior. Compare hyc sphere and atmosphere.

litmus. An indicator obtained by oxi tion of the orcin of certain lichens the presence of ammonia, chang from red to blue at pH = 7 w acidity is decreased.

litmus paper. Unsized paper satura with litmus solution, a conven form of litmus indicator; blue litm indicating alkalinity, red litmus i cating acidity.

litre. See liter.

littoral zone. Zone between high low water marks; very shallow w of a coast.

live load. Moving or variable load.

liver of sulfur. See lime sulfur.

livering. Coagulation into a vis rubbery mass of a paint or enam

load, balanced. A current having e potential, current and power in e phase of a multi-phase circuit.

load, breaking. See breaking load.

load, live. See live load.

load, permanent. Constant and

arying load.

d, working. Average load to which structure is subjected.

m. Molding mixture of sand and clay.

ate. Provided with lobes.

elia (Indian or wild tobacco; asthma weed). Dried leaves and tops of L. inflata; used in medicine.

beline. $C_{22}H_{33}NO_2$; m.w. 321.19; yel. syrup.; s.w.; s.al.

obeline. $C_{22}H_{31}NO_2$, or $C_{21}H_{33}NO_2$; m.w. 337.22, or 321.19; col. need.; m.p. 130-1

obry de Bruyn transformation. If a solution of one of the sugars d-glucose, d-fructose or d-mannose is treated with very dilute alkalies, the two others will appear.

ocron. Synthetic urea resin.

ocust bean. See carob.

ode. A metalliferous vein or fissure in rocks.

odestone. See magnetite.

oess. Fine, porous, siliceous silt containing some calcareous material which often collects in nodules or vertical walls.

og-log paper. Co-ordinate ruled paper on which the scales are logarithmic.

ogarithmic scale. Linear scale on which distances of points from zero of the scale are proportional to the logarithms of numbers of these points.

loginess. Slowness in recovery after stretching of an elastic material.

logwood (hematoxylon). Heartwood of H. campechianum; used as a dye and in medicine.

logwood extract. Concentrated logwood liquid; sp.gr. 1.25; used in tanning leather and textile dyeing.

löllingite (leucopyrite). Fe_2As_4 to $FeAs_2$, may cont. Co, Ni, Au or S; s.g. 7-7.4; white arsenic.

long oil. See oil, long.

long ton. A ton of 2240 pounds.

loop. Cyclic closed curve graph.

loose emulsion. See emulsion, loose

lophine (2, 4, 5-triphenylimidazole). $C_{21}H_{16}N_2$; m.w. 296.14; need.; m.p. 275; i.w.

lophotrichous. Having a tuft of flagella at one end of a cell.

Lorenz number. Product of mobility coefficient of an ion and its radius, equal to 9.27×10^{-7} cm./ohm.

Lorenz's law. Ratio of the thermal and electrical conductivities, of all metals, is proportional to the absolute temperature.

Lorival. Synthetic tar-acid resin for molding and laminating.

Lorol. Technical lauryl alcohol.

Lorol amine. A clear light red to deep yellow oily liquid; b.p. 65-160 at 8 mm.; i.w.; an intermediate and a mineral flotation agent.

Loschmidt's number. Number of molecules per unit volume of an ideal gas at 0° C and normal atmospheric pressure, equal to 2.705×10^{19}.

lovage (levisticum; **sea parsley**; ligusticum). Plant of lev. officianale; used in medicine.

low temperature carbonization. Carbonization of coal at temperatures below 500° C, used for production of motor fuels.

low temperature spirit, crude. A crude product extracted from low temperature coal gases or tar having a sp.gr. less than 0.820 at 15.5/15.5.

lubricant. A substance used to decrease the friction between solid faces.

lubricant, extreme pressure. Lubricant which will withstand high tooth pressure and rubbing velocity. Used for hypoid and worm gears.

luccu oil. See oil, olive.

luciferin. The chemical substance possessed by the fire-fly, which glows under the influence of an enzyme, luciferase.

Lucite. Synthetic acrylate resin having high index of refraction and, in the transparent form, optically very clear, and absorbing only a very small fraction of transmitted light.

Ludwig-Soret effect. Change in concentration of one of the components of a mixed crystal due to temperature.

Lugol's solution. A water solution of potassium iodide and iodine used in medicine.

Lumarith. A cellulose acetate plastic, available in transparent, translucent and opaque, colored and colorless forms, thermoplastic, of excellent molding and machining properties, slow burning, resistant to hydrocarbons and oils.

lumbang oil. See oil, candle nut.

lumen. Unit of luminous flux, equal to the flux thru a unit solid angle (steradian), from a uniform point source of one candle, or to the flux on a unit surface all points of which are at unit distance from a uniform point source of one candle.

lumenophor. Molecule or group of molecules which emits light on absorbing energy of an incident electron.

luminal. See phenobarbital.

luminescence. Emission of visible or invisible waves upon excitation by exposure to rays of a shorter wavelength.

luminol (5-amino-2, 3-dihydro-1, 4-phthalazinedione; 3-aminophthalhydrazide). $NH_2C_6H_3CONHNHCO$; m.w. 177.08; yel.; m.p. ca. 280; i.w.; s.al.

luminous flux. The total visible energy emitted by a source per unit time.

luminous intensity (candle power). Property of a source of emitting luminous flux, measured by the luminous flux emitted per solid angle; a measure of intensity of source of illumination, compared with a standard candle.

luminous paint. Paint containing a phosphorescent sulfide or oxide in oil, such as calcium and barium sulfide, and calcium tungstate.

lunar caustic. See silver nitrate.

d-lupanine. $C_{15}H_{24}N_2O$; m.w. 248.20; col. need.; m.p. 44; s.w.; s.al.

dl-lupanine. $C_{15}H_{24}N_2O$; m.w. 248.20; need. f. pet. eth.; m.p. 99; s.w.; s.al.

lupinidine. See sparteine.

lupinine. $C_{21}H_{40}N_2O_2$; m.w. 352.33; col. rhomb.; m.p. 68.5-9.2; b.p. 256; s.w.; s.al.

lupinine, hydrochloride. $C_{10}H_{19}NO \cdot HCl$; m.w. 205.62; lg. rhomb. cr.; m.p. 212-3; s.w.; s.al.

lupinine, methyl-. $C_{10}H_{18}NO \cdot CH_3$; m.w. 183.17; oily liq.; b.p. 145-6 [15]; s.al.

lupulin. See hops.

lute. To pack, seal, or repair joints or open edges, as of furnace doors or lids with plastic fireclay or other refractory material.

lutecium. Lu; at. wt. 175.0; at. no. 71; valence 3; an element occurring in small amounts in minerals containing yttrium.

lutein. Yellow pigment found in many vegetable and animal tissues.

2, 4-lutidine (2, 4-dimethylpyridine; α γ-lutidine). $(CH_3)_2C_5H_3N$; m.w. 107.08; col. liq.; b.p. 157.1; s.w.; s.al.

2, 6-lutidine (2, 6-dimethylpyridine; α α'-lutidine). $(CH_3)_2C_5H_3N$; m.w. 107.08; col. liq.; b.p. 143; s.w.; s.al.

3, 4-lutidine (3, 4-dimethylpyridine; β γ-lutidine). $(CH_3)_2C_5H_3N$; m.w. 107.08; col. liq.; b.p. 163.5-4.5; s.al.

lutidinic acid (2, 4-pyridinedicarboxylic acid). $C_5H_3N(COOH)_2$; m.w. 167.05; leaf. or pr.f.w.; m.p. 248-50; s.w.; s.al.

lutidinic acid, 6-methyl-. See uvitonic acid.

lux. Measure of illumination of a surface, equal to 0.092902 foot-candle, 1.000 lumen/sq. meter.

lycaconitine. $C_{17}H_{24}N_2O_8 \cdot 2H_2O$; m.w. 518.31; ylsh.-wh. resinous; m.p. 112-5; s.w.; s.al.

lyate. Acidate of its solvent.

lycine. See betaine.

lycopene. An isomer of carotene (q.v.).

lycopodium (club-moss; vegetable sulfur). Spores of L. clavatum; fine yellow powder; used in pharmacy, a dusting powder.

l-lycorine. $C_{16}H_{17}NO_4$; m.w. 287.14; col. pr.; i.w.; s.al.

Lydian stone (lydite; touchstone; basanite). Black form of quartz; used in analysis of precious metals.

lydite. See Lydian stone.

lye. Aqueous solution of sodium or potassium hydroxide.

lye, potash. See potassium hydroxide.

lye, soda. See sodium hydroxide.

lye, spent. Salt and glycerin solution formed in soap manufacture.

Lykopon (Vatrolite). Concentrated sodium hyposulfite, $Na_2S_2O_4$; a stripping agent.

Lyman bands. Group of spectral bands in Schumann region of hydrogen spectrum between 1450 Å-1650 Å.

lymph. A body-circulatory fluid resembling plasma of the blood, in which the cells are bathed and thru which transfer of materials takes place.

lyonium salt. Salt formed when a neutral acid is dissolved in a basic medium.

lyophilic. A reversible colloid; not easily precipitated from solution and readily dispersible after precipitation by an addition of the solvent.

Lyofix DE. A quarternary salt of an organic base having range of $C_{12}H_{25}$ or higher; used as a leveling agent for basic dyes.

lyophobic. A colloid which is readily precipitated from solution, and which is not redispersed by an addition of the solvent.

lysin. Anti-body which causes the dissolving of its specific antigen.

d-lysine (d-α, ε-diaminocaproic acid; d-2, 6-diaminohexanoic acid). $NH_2(CH_2)_4CH(NH_2)COOH$; m.w. 146.13; flat need. f.w., hex. pl.f.al. s.w.; s.al.

l-lysine (l-2, 6-diaminohexanoic acid; l-α, ε-diaminocaproic acid). $NH_2(CH_2)_4CH(NH_2)COOH$; m.w. 146.13; flat need. f.w., hex. pl.f.al. s.w.; s.al.

l-lysine, picrate. $C_6H_{14}N_2O_2 \cdot C_6H_3N_3O_7$; m.w. 375.17; need.; i.al.

Lysol. A commercial disinfectant composed of alkaline salts of phenol and the cresols, together with oils and resin soaps, a brown oily liquid.

lysozyme. Protective bacteriolytic agent present in tears, sputum and nasal mucous membrane.

lytic. Capable of dissolving cells.

M

M.K.S. system. System of units based on meter, kilogram and second.

M acid. See 5-naphthol, 1-amino-7-sulfonic acid.

M series. Series of frequencies in x-ray spectrum of an element due to change from higher quantum states to a state of principal quantum number 3.

Macassar, gum. See gum Macassar.

mace oil. See oil, mace.

Mache unit. $\frac{1}{3700}$th part of a millicurie (q.v.).

machine, simple. See simple machine.

mackintoshite. Natural hydrated uranium-thorium silicate.

maclurin (2, 4, 6, 3′, 4′-pentahydroxybenzophenone; moringatannic acid; moringatannin). $C_{13}H_{10}O_6 \cdot H_2O$; m.w. 280.09; col.-yel. pr.f.w.; s.al.

macro-. Prefix meaning large.

macrobiosis. Longevity.

macrochemistry. Chemistry dealing with relatively large quantities as opposed to microchemistry.

macrograph. Reproduction magnified ten or less diameters.

macromolecule. Giant molecule of very great length; equal in size to that of a colloidal particle.

macromol. Long molecule of very small cross-section present in lyophilic colloids.

macroscopic. Of an order of magnitude capable of being perceived and observed by the unaided senses; compare microscopic.

madder (turkey red). Pulverized root of rubia tinctorum; a glucoside rubian yielding alizarin by decomposition; formerly the only source of alizarin; used in manufacture of madder lakes for artists' colors, pigments, in dyeing wool and printing calicoes.

magenta. See fuchsine.

magistral. Mixture of copper and iron sulfates and oxides, used in Mexican amalgamation silver extraction process.

magma. A paste of finely divided material used in medicine; an amorphous mass of once molten rock beneath the crust of the earth.

magnalium. An alloy containing aluminum (70-90) and magnesium (30-10); sp.gr. 2.00-2.50.

magnesia. See magnesium oxide.

magnesia alba. See magnesium carbonate, basic.

magnesia mica. See phlogopite.

magnesite. A mineral, $MgCO_3$; hex. (trig. rhbdr.), col., wh.-yelsh., br.-blk.; sp.gr. 2.95-3.2; hardness 3.5-4.5.

magnesite, chloro-. See magnesium chloride.

magnesium. Mg; at. wt. 24.32; hex. silv. wh. met.; s.g. 1.74; m.p. 651; b.p. 1110; i.w.; used in alloys, pyrotechnics, photography.

magnesium acetate. $Mg(C_2H_3O_2)_2 \cdot 4H_2O$; m.w. 214.43; monocl. col., deliq.; s.g. 1.454; s.w.; s.al.

magnesium aluminate (spinel). $MgO \cdot Al_2O_3$; m.w. 142.26; cub. col.; s.g. 3.6; m.p. 2135.

magnesium-aluminum garnet. See spessartite.

magnesium ammonium arsenate $MgNH_4AsO_4 \cdot 6H_2O$; m.w. 289.38; tetr. col.; s.g. 1.932 [15]; i.al.

magnesium ammonium carbonate. $MgCO_3(NH_4)_2CO_3 \cdot 4H_2O$; m.w. 252.46; wh.; s.w.; i.al.

magnesium ammonium chloride. $MgCl_2 \cdot NH_4Cl \cdot 6H_2O$; m.w. 256.82; rhomb., deliq.; s.g. 1.456; s.w.

magnesium ammonium chlorate. $MgCrO_4 \cdot (NH_4)_2CrO_4 \cdot 6H_2O$; m.w. 400.51; monocl. yel.; s.gr. 1.84; s.w.

magnesium ammonium phosphate (struvite). $MgNH_4PO_4 \cdot 6H_2O$; m.w. 245.47; rhomb. col.; s.g. 1.72; i.al.

magnesium ammonium sulfate (bous-singaultite). $MgSO_4 \cdot (NH_4)_2SO_4 \cdot 6H_2O$; m.w. 360.61; monocl. col.; s.g. 1.70; m.p. >120; s.w.

magnesium arsenate. $Mg_3(AsO_4)_2 \cdot 22H_2O$; m.w. 747.16; s.g. 1.788; i.w.

magnesium · arsenate, ortho- mon-H. $2MgHAsO_4 \cdot 13H_2O$; m.w. 562.72; s.g. 3.155 [15]; i.w.

magnesium arsenite, ortho-. $Mg_3(AsO_3)_2$; m.w. 318.82; s.w.

magnesium benzoate. $Mg(C_7H_5O_2)_2 \cdot 3H_2O$; m.w. 320.44; wh. powd.; m.p. d. 200 (?); s.w. s.al.

magnesium borate, meta-. $Mg(BO_2)_2 \cdot 8H_2O$; m.w. 254.08; tetr.; s.g. 2.30; i.w.

magnesium borate, ortho-. $Mg_3(BO_3)_2$; m.w. 190.60; rhomb. col.; s.g. 2.99 [21]; s.w.

magnesium borate, per-. MgB_4O_7; m.w. 179.6 wh. powd.; s.w.; used as drier; dental powders, in medicine; metal polishing compositions.

magnesium bromate. $Mg(BrO_3)_2 \cdot 6H_2O$; m.w. 388.25; cub. col.; s.g. 2.29; m.p. $-6H_2O$ 200; s.w.; i.al.

magnesium bromide. $MgBr_2$; m.w. 184.15; col. cr., deliq.; s.g. 3.72; m.p. 700; s.w.

magnesium bromide (hydrated). $MgBr_2 \cdot 6H_2O$; m.w. 292.25; hex. col.; s.w.; s.al.

magnesium calcium chloride. See calcium magnesium chloride.

magnesium carbonate (magnesite). $MgCO_3$; m.w. 84.32; trig. wh.; s.g. 3.037.

magnesium carbonate (nesquehonite). $MgCO_3 \cdot 3H_2O$; m.w. 138.37; rhomb. col. need.; s.g. 1.850; m.p. 165.

magnesium carbonate, basic (hydromagnesite). $3MgCO_3 \cdot Mg(OH)_2 \cdot 3H_2O$; m.w. 365.34; rhomb. wh.; s.g. 2.16; used in cosmetics, toothpastes and in silver polishes.

magnesium chlorate. $Mg(ClO_3)_2 \cdot 6H_2O$; m.w. 299.33; wh. cr. or powd., deliq.; s.g. 1.80 [25]; m.p. 35; s.w.; s.al.

magnesium chlorate, per-. $Mg(ClO_4)_2$; m.w. 223.23; s.g. 2.60 [22]; s.w.

magnesium chlorate, per- (hydrated). $Mg(ClO_4)_2 \cdot 6H_2O$; m.w. 331.33; s.g. 1.970 [25]; m.p. 147.

magnesium chloride (chloromagnesite). $MgCl_2$; m.w. 95.23; hex. col.; s.g. 2.325; m.p. 712; b.p. 1412; s.w.; s.al.

magnesium chloride (bischofite). $MgCl_2 \cdot 6H_2O$; m.w. 203.33; monocl. col. deliq.; s.g. 1.56; s.w.; s.al.

magnesium chromate. $MgCrO_4 \cdot 7H_2O$; m.w. 206.44; rhomb. yel.; s.g. 1.695; s.w.

magnesium citrate. $Mg_3(C_6H_5O_7)_2 \cdot 14H_2O$; m.w. 703.26; wh. gran. powd.; s.w.

magnesium ferrocyanide. $Mg_2Fe(CN)_6 \cdot 12H_2O$; m.w. 476.72; pa. yel. cr.; s.w.

magnesium fluoride (sellaite). MgF_2; m.w. 62.32; tetr. col.; s.g. 3.0; m.p. 1396; b.p. 2239; i.w.; i.al.

magnesium fluosilicate. $MgSiF_6$; m.w. 166.38; wh. cr. or powd.; s.w.

magnesium fluosilicate (hydrated). $MgSiF_6 \cdot 6H_2O$; m.w. 274.47; trig. wh.; s.g. 1.788.

magnesium formate. $Mg(CHO_2)_2 \cdot 2H_2O$; m.w. 150.37; rhomb. col.; s.w.; i.al.

magnesium hydroxide (brucite). $Mg(OH)_2$; m.w. 58.34; trig. col.; s.g. 2.4.

magnesium iodate. $Mg(IO_3)_2 \cdot 4H_2O$; m.w. 446.22; monocl.; s.g. 3.3 [12.5]; m.p. $-4H_2O$ 210; s.w.

magnesium iodide. MgI_2; m.w. 278.16; wh. cr., deliq.; s.g. 4.25; s.w.; s.al.

magnesium iodide (hydrated). $MgI_2 \cdot 8H_2O$; m.w. 422.28; wh. deliq. powd.; s.w.; s.al.

magnesium lactate. $Mg(C_3H_5O_3)_2 \cdot 3H_2O$; m.w. 256.44; wh. cr. powd.; v. bitter taste; s.w.; i.al.

magnesium laurate. $Mg(C_{12}H_{23}O_2)_2$; m.w. 422.68; m.p. 150.4; s.w.; s.al.

magnesium manganate, per-. $Mg(MnO_4)_2 \cdot 6H_2O$; m.w. 370.27; dk. purp. need. deliq.; s.w.

magnesium myristate. $Mg(C_{14}H_{27}O_2)_2$; m.w. 478.74; m.p. 131.6; s.w.; s.al.

magnesium nitrate. $Mg(NO_3)_2 \cdot 6H_2O$; m.w. 256.43; monocl. col. deliq.; s.g. 1.464; m.p. 95; b.p. $-5H_2O$ 330; s.w.; s.al.

magnesium nitride. Mg_3N_2; m.w. 100.98; grn. yel. cr.; i.w.; i.al.

magnesium oleate. $Mg(C_{18}H_{33}O_2)_2$; m.w. 586.23; yelsh. powd. or mass; i.w.; s.al. varnish drier; prevents spontaneous ignition of benzine in cleaning plants.

magnesium oxalate. $MgC_2O_4 \cdot 2H_2O$; m.w. 148.35; wh. powd.; s.g. 2.45 ($2\frac{1}{2}H_2O$) s.w.

magnesium oxide (periclase). MgO; m.w. 40.32; cub. col.; s.g. 3.65; m.p. 2800; i.al.

magnesium oxide, per- (magnesium perhydrol). MgO_2; m.w. 56.32; white powder; i.w.; bleach, oxidant, antiseptic.

magnesium oxychloride cement (Sorel cement, magnesia cement, xylolith). A product resulting from reaction of magnesia, magnesium chloride, and water; used as artificial building stone, marble, stone flooring.

magnesium palmitate. $Mg(C_{16}H_{31}O_2)_2$; m.w. 534.80; m.p. 121.5; s.w.; s.al.

magnesium perhydrol. See magnesium oxide, per-.

magnesium phosphate, ortho-. $Mg_3(PO_4)_2 \cdot 4H_2O$; m.w. 335.06; monocl.; s.g. 1.64 [18].

magnesium phosphate, ortho- (bobierite). $Mg_3(PO_4)_2 \cdot 8H_2O$; m.w. 407.12; monocl. pl.; s.g. 2.41.

magnesium phosphate, ortho- acid (newberyite). $MgHPO_4 \cdot 3H_2O$; m.w. 174.39; rhomb. wh.; s.g. 210; s.w.

magnesium phosphate, ortho- acid. $MgHPO_4 \cdot 7H_2O$; m.w. 246.46; hex.; m.p. $-4H_2O$ 100; i.al.

magnesium phosphate, pyro-. $Mg_2P_2O_7$; m.w. 222.68; monocl. col.; s.g. 2.598 [22]; m.p. 1383; i.w.; i.al.

magnesium phosphate, pyro- (hydrated). $Mg_2P_2O_7 \cdot 3H_2O$; m.w. 276.73; wh amor.; s.g. 2.56; i.w.; i.al.

magnesium phosphite, hypo-. $Mg(H_2PO_2)_2 \cdot 6H_2O$; m.w. 262.48; wh. cr.; s.w.; i.al.

magnesium phosphite, ortho-. $MgHPO_3 \cdot 3H_2O$; m.w. 158.39.

magnesium potassium carbonate. $MgKH(CO_3)_2 \cdot 4H_2O$; m.w. 256.49; tricl. col.; s.g. 2.98.

magnesium potassium chloride (carnallite). $MgCl_2 \cdot KCl \cdot 6H_2O$; m.w. 277.88; rhomb. col., deliq.; s.g. 1.60; m.p. 167.

magnesium potassium chlorosulfate. $MgK(SO_4)Cl \cdot 3H_2O$; m.w. 248.98; col. monocl.; s.g. 2.12-15; s.w.

magnesium potassium sulfate (picromerite; schönite). $MgSO_4 \cdot K_2SO_4 \cdot 6H_2O$; m.w. 402.73; monocl. col.; s.g. 2.15; s.w.

magnesium salicylate. $Mg(C_7H_5O_3)_2 \cdot 4H_2O$; m.w. 370.46; col. or sl. redsh. effl. cr. powd.; s.w.; s.al.

magnesium selenate. $MgSeO_4 \cdot 6H_2O$; m.w. 275.61; monocl.; s.g. 1.928; s.w.

magnesium silicate (clinoenstatite). $MgSiO_3$; m.w. 100.38; monocl.; s.g. 3.28.

magnesium silicide. Mg_2Si; m.w. 76.70; oct.; m.p. 1102; i.w.

magnesium silicofluoride. See magnesium fluosilicate.

magnesium sodium chloride. $MgCl_2 \cdot NaCl \cdot H_2O$; m.w. 171.70; s.w.

magnesium sodium sulfate (bloedite). $MgNa_2(SO_4)_2 \cdot 4H_2O$; m.w. 334.50; monocl. col.; s.g. 2.23; s.w.

magnesium stearate. $Mg(C_{18}H_{35}O_2)_2$; m.w. 590.87; wh. powd.; s.w.; s.al.; m.p. 132.

magnesium sulfate. $MgSO_4$; m.w. 120.38; col. cr.; s.g. 2.66; m.p. 1185; s.w.; s.al.

magnesium sulfate (hydrated) (kieserite). $MgSO_4 \cdot H_2O$; m.w. 138.40; monocl. col.; s.g. 2.57; s.w.

magnesium sulfate (epsom salt, epsomite). $MgSO_4 \cdot 7H_2O$; m.w. 246.49; rhomb. (monocl.) col.; s.g. 1.68; m.p. $-6H_2O$, 150; b.p. $-7H_2O$, 200; s.w.; s.al.

magnesium sulfide. MgS; m.w. 56.38; cub. col.; s.g. 2.80.

magnesium sulfite. $MgSO_3 \cdot 6H_2O$; m.w. 212.47; wh. cr. powd.; m.p. $-6H_2O$ 200; i.al.

magnesium d-tartrate. $MgC_4H_4O_6 \cdot 5H_2O$; m.w. 262.43; monocl.; s.g. 1.67; s.w.; i.al.

magnesium d-tartrate, acid. $MgH_2(C_4H_4O_6)_2 \cdot 4H_2O$; m.w. 394.46; rhomb.; s.g. 1.72.

magnesium thiosulfate. $MgS_2O_3 \cdot 6H_2O$; col. pr.; s.g. 1.818 [24]; m.p. $-3H_2O$ 170; s.w.; s.al.

magnesium tungstate. $MgWO_4$; m.w. 372.32; col. monocl.; s.g. 5.66; i.w.; i.al.

magnetic analysis. Separation of electrified particles, (by a magnetic field) which differ in speed, charge or mass.

magnetic double refraction. See Cotton-Mouton effect.

magnetic flux. Product of field strength by any area perpendicular to the magnetic field.

magnetic induction. See induction, magnetic.

magnetic moment. Torque experienced by a magnet at right angles to a uniform field of unit intensity.

magnetic permeability. Ratio of the magnetic induction in a substance to

the magnetizing field.

magnetic pole (quantity of magnetism). Unit force with which two unit quantities of magnetism, concentrated at points unit distance apart, in a vacuum, repel each other.

magnetic potential (magnetomotive force). At any point the work required to bring a unit positive pole from an infinite distance (zero potential) to the point.

magnetic pyrites. See pyrrhotite.

magnetic quantum number. Quantum number referring to behavior of an atom or molecule in a magnetic field.

magnetic rotation. The rotation of a plane of polarized light by a substance placed in a magnetic field.

magnetic susceptibility. See susceptibility, magnetic.

magnetic transformation temperature. See Curie point.

magnetism. Science of magnets and their fields of force; the property of certain bodies to attract or repel other bodies, the force being distinct from gravitational and electrostatic forces, due to motion of electrons; exhibited by lodestone, liquid oxygen and iron in a magnetic field.

magnetite (lodestone). A magnetic mineral, Fe_3O_4; cub., iron blk.; sp.gr. 4.967-5.180; hardness 5.5-6.5.

magnetizing force. Magnetic intensity effective in magnetizing a body.

magnetocaloric effect. Reversible cooling of a ferromagnetic substance, which has been magnetized to saturation in a strong magnetic field, on removal of field.

magnetomotive force. The line integral of a magnetizing force around the path in any closed path in a magnetic field; also see magnetic potential.

magneton. Unit of magnetic value; 1126 ergs per gauss per gram-atom.

magneton number. Integer whose product with the Bohr magneton equals the magnetic moment of an atom.

magneto resistance. Rise in electrical resistance under the influence of a constant magnetic field.

magnetron. Thermionic vacuum tube in which ionic motion is influenced by a magnetic field perpendicular to electric field producing the motion; apparatus for generating very short radio waves.

magnifying power. Ratio of angle subtended by image of object seen thru an optical instrument to angle subtended by the object when seen by unaided eye.

Magnus effect. Lateral force exerted by wind upon a rotating cylinder having its axis perpendicular to direction of the wind.

mahogany acid (mahogany sulfonate). Complex crude mixture of sulfonic acids, from petroleum refining sludge, that are soluble in oils.

mahogany sodium sulfonate. See sodium sulfonate, mahogany.

mahogany sulfonate. See mahogany acid.

maize oil. See oil, corn.

Majorana force (Majorana interactions). Force of attraction between neutrons or between neutrons and protons in atoms.

Makalot. Synthetic tar-acid or alkyd resin.

Malus law. Intensity of a light beam, after two reflections from non-metallic surfaces at the polarizing angle, is proportional to square of cosine of angle subtended by reflecting planes.

malachite (green carbonate of copper). A mineral, $CuCO_3 \cdot Cu(OH)_2$; monocl., lt.-dk. green; sp.gr. 3.90-4.03; hardness 3.5-4.0.

malachite, artificial blue. See copper carbonate blue.

malachite, blue. See azurite.

malachite green (benzaldehyde green). A triphenylmethane dye.

malachite green, leuco. See aniline, p, p'-benzalbis-N, N-dimethyl-.

malacolite. See diopside.

malakon (malacon). A zirconium silicate containing rare earths.

malamide (2-hydroxybutanediamide; malic amide). $C_2H_3(OH)(CONH_2)_2$; m.w. 132.08; pr.f.w.; m.p. 156-8; s.w.

Malay camphor. See d-borneol.

maleamic acid (maleamidic acid; maleic acid monoamide). $H_2NCOCH{:}CHCOOH$; m.w. 115.05; pl.; m.p. 152-3; s.w.; s.al.

male fern oil. See oil, male fern.

maleic acid (cis-butenedioic acid; cis-,1 2-ethylenedicarboxylic acid). $HOOCCH{:}CHCOOH$; m.w. 116.03; col. monocl. pr.; m.p. 130.5; s.w.; s.al.

maleic acid value. Measure of "diene value" of oils and fats; equals 12.892 × c.c. N NaOH divided by weight of sample in grams.

maleic acid, bromo-. $BrC(COOH){:}CHCOOH$; m.w. 194.94; need. or pr.; m.p. 128; s.w.; s.al.

maleic acid, chloro-. $ClC(COOH){:}CHCOOH$; m.w. 150.48; col. pr.f.et.-chl.; m.p. 108; s.w.; s.al.

maleic acid, diamyl ester. $(CHCOOC_5H_{11})_2$; m.w. 256.19; col.; sp.gr. 0.981 ^{20}; b.p. 130-145 at 2 mm.

maleic acid, diethyl ester (diethyl maleate; ethyl maleate). $(CHCOOC_2H_5)_2$; m.w. 172.09; col. liq.; b.p. 225; i.w.; s.al.

maleic acid, dimethyl ester (methyl maleate). $(CHCOOCH_3)_2$; m.w. 144.06; col. liq.; m.p. −19; b.p. 205; i.w.

maleic acid, methyl-. See citraconic acid.

maleic acid, monoamide. See maleamic acid.

maleic acid, p-phenylphenacyl ester. $(CHCOOCH_2COC_6H_4C_6H_5)_2$; m.w. 504.19; m.p. 168.

maleic adducts. Reaction products of bodies containing conjugated double bonds with other products, generally acidic, containing the group $CH{=}C{-}CO{-}$ which is not part of a benzene ring.

maleic anhydride (cis-butenedioic anhydride; 2, 5-furandione). $OCOCH{:}CHCO$; m.w. 98.02; col. rhomb. need. f. chl.; m.p. 53; b.p. 202; s.w.; s.al.

maleic anhydride, bromo-. $OCOCBr{:}CHCO$; m.w. 176.92; liq.; b.p. 215.

maleic anhydride, chloro-. $OCOCCl{:}CHCO$; m.w. 132.46; liq.; m.p. 33; b.p. 196.3.

maleic anhydride, methyl-. See citraconic anhydride.

maleinized. Referring to diene reaction products obtained by treatment with maleic acid or anhydride.

malic acid (dl). $HOOCCH(OH)CH_2COOH$; m.w. 134.05; col. cr.; m.p. 128.5; s.w.; s.al.

malic acid (l) (ordinary malic acid; l-hydroxybutanedioic acid; l-hydroxysuccinic acid). $HOOCCH(OH)CH_2COOH$; m.w. 134.05; col. need.; m.p. 100; s.w.; s.al.

malic acid, acetate (acetoxysuccinic acid; O-acetylmalic acid). $CH_3COOCH(COOH)CH_2COOH$; m.w. 176.06; cr.; m.p. 134.

malic acid, O-acetyl-. See malic acid, acetate.

malic acid, diethyl ester (diethyl hydroxybutanedioate; ethyl malate). $CH_2(COOC_2H_5)CHOHCOOC_2H_5$; m.w. 190.11; col. liq.; b.p. 253; s.w.; s.al.

malic acid, dimethyl ester (methyl malate; methyl hydroxysuccinate). $CH_3OOCCH(OH)CH_2COOCH_3$; m.w. 162.08; col. liq.; b.p. 242; s.w.; s.al.

malic acid, dipropyl ester (dipropyl hydroxybutanedioate; propyl malate). $C_3H_7OOCCHOHCH_2COOC_3H_7$; m.w. 218.14; liq.; m.p. 10.5; b.p. 151 ^{10}.

malic acid, α-methyl-. See citramalic acid.

malic amide. See malamide.

malonamide (propanediamide; malonic diamide). $CH_2(CONH_2)_2$; m.w. 102.06; col. monocl. need.; m.p. 170; i.al.

malonic acid (propanedioic acid; methanedicarboxylic acid). $HOOCCH_2COOH$; m.w. 104.03; col. tricl.; m.p. 135.6; s.w.; s.al.

malonic acid, acetyl-, diethyl ester (ethyl acetylmalonate; diethyl acetylpropanedioate). $CH_3COCH(COOC_2H_5)_2$; m.w. 202.11; liq.; b.p. 240.

malonic acid, allyl- (2-propenylpropanedioic acid; 3-butene-1, 1-dicarboxylic acid). $COOHCH(CH_2CH{:}CH_2)COOH$; m.w. 144.06; tricl. f.et.; m.p. 103-5; s.w.; s.al.

malonic acid, allyl-, diethyl ester (ethyl allylmalonate; diethyl [2-propenyl] propanedioate; diethyl 3-butene-1, 1-dicarboxylate). $CH_2{:}CHCH_2CH(COOC_2H_5)_2$; m.w. 200.12; col. liq.; b.p. 222-3; i.w.; s.al.

malonic acid, allyl-, diethyl ester (ethyl allylmalonate; diethyl [2-propenyl] propanedioate; diethyl 3-butene-1, 1-dicarboxylate). $CH_2{:}CHCH_2CH(COOC_2H_5)_2$; m.w. 200.12; col. liq.; b.p. 222-3; i.w.; s.al.

malonic acid, amino- (2-aminopropanedioic acid). $COOHCH(NH_2)COOH$; m.w. 119.05; col. cr. $(+1H_2O)$ f.w.; s.w.; s.al.

malonic acid, amyl-, diethyl ester (ethyl amylmalonate). $CH_3(CH_2)_4CH(COOC_2H_5)_2$; m.w. 230.17; col. liq.; b.p. 121-3 ^{4}; i.w.; s.al.

malonic acid, anilino-, ethyl ester (anilinomalonic ester; diethyl anilinomalonate). $C_6H_5NHCH(COOC_2H_5)_2$; m.w. 251.14; need.; m.p. 44-5; s.al.

malonic acid, benzal- (2-phenyl-1, 1-ethylenedicarboxylic acid). $C_6H_5CH{:}C(COOH)_2$; m.w. 192.06; pr.f.w.; s.w.; s.al.

malonic acid, benzyl-, diethyl ester (diethyl benzylpropanedioate; ethyl benzylmalonate). $C_6H_5CH_2CH(COOC_2H_5)_2$; m.w. 250.14; liq.; b.p. 296-8; i.w.

malonic acid, bromo-, (bromopropanedioic acid). $BrCH(COOH)_2$; m.w. 182.94; need. f.et.; s.al.

malonic acid, bromo-, diethyl ester (diethyl bromopropanedioate). $BrCH(COOC_2H_5)_2$; m.w. 239.00; liq.; m.p. −54; b.p. 235; i.w.; s.al.

malonic acid, sec-butyl-, diethyl ester (ethyl sec-butylmalonate). $C_2H_5(CH_3)CHCH(COOC_2H_5)_2$; m.w. 216.16; col. liq.; b.p. 224-5; s.w. s.al.

malonic acid, butyl-, diethyl ester (ethyl n-butylmalonate). $CH_3(CH_2)_3CH(COOC_2H_5)_2$; m.w. 216.16; col. liq.; b.p. 235-40; i.w.; s.al.

malonic acid, chloro- (chloropropanedioic acid). $CHCl(COOH)_2$; m.w. 138.48; pr.; m.p. 133; s.w.; s.al.

malonic acid, dibenzyl-, diethyl ester (diethyl 1, 3-diphenyl-2, 2-propanedicarboxylate). $(C_6H_5CH_2)_2C(COOC_2H_5)_2$; m.w. 340.19; thk. oil; m.p. 13; b.p. 243-6 ^{15}; s.al.

malonic acid, dibromo-, diethyl ester (diethyl dibromopropanedioate). $CBr_2(COOC_2H_5)_2$; m.w. 317.91; liq.

malonic acid, diethyl-, diethyl ester (diethyl diethylpropanedionate). $(C_2H_5)_2C(COOC_2H_5)_2$; m.w. 216.16; col. liq.; b.p. 223; s.al.

malonic acid, diethyl ester (diethyl propanedionate; ethyl malonate; malonic ester). $CH_2(COOC_2H_5)_2$; m.w. 160.09; col. liq.; m.p. −49.9; b.p. 198.9; s.al.

malonic acid, diethyl-, piperazinium salt. $C_4H_{10}N_2 \cdot (C_2H_5)_2C(COOH)_2$; m.w. 246.19; wh. cr.; m.p. 80-1; s.w.; s.al.

malonic acid, dihydroxy-. See mesoxalic acid.

malonic acid, dimethyl-, diethyl ether (diethyl dimethylpropanedioate). $(CH_3)_2C(COOC_2H_5)_2$; m.w. 188.12; col. liq.; b.p. 196.5 ^{748}; i.w.; s.al.

malonic acid, dimethyl ester (methyl malonate; dimethyl propanedioate). $CH_2(COOCH_3)_2$; m.w. 132.06; col. liq.; m.p. −62; b.p. 181; s.w.; s.al.

malonic acid, dipropyl ester (dipropyl propanedioate; propyl malonate). $CH_2(COOC_3H_7)_2$; m.w. 188.12; col. liq.; b.p. 228.3.

malonic acid, ethyl- (ethylpropanedioic acid; 1, 1-propanedicarboxylic acid). $C_2H_5CH(COOH)_2$; m.w. 132.06; col. rhomb. cr.; m.p. 111.5; s.w.; s.al.

malonic acid, ethyl, diethyl ester (ethyl ethylmalonate; ethylmalonic ester). $C_2H_5CH(COOC_2H_5)_2$; m.w. 188.12; col. liq.; b.p. 211 ^{746}; s.w.; s.al.

malonic acid, ethylene-. See vinaconic acid.

malonic acid, (α-ethylpropyl-), diethyl ester (ethyl sec-amylmalonate). $(C_2H_5)_2CHCH(COOC_2H_5)_2$; m.w. 230.17; col. liq.; b.p. 242-5; s.w.; s.al.

malonic acid, heptyl- (heptylpropanedioic acid; 1, 1-octanedicarboxylic acid). $CH_3(CH_2)_6CH(COOH)_2$; m.w. 202.14; cr.f.bz.; m.p. 95; i.w.; s.al.

malonic acid, hydroxy-. See tartronic acid.

malonic acid, isoamyl-, diethyl ester (ethyl isoamylmalonate). $(CH_3)_2CH(CH_2)_2CH(COOC_2H_5)_2$; m.w. 230.17; col. liq.; b.p. 240-2; i.w.; s.al.

malonic acid, isobutyl- (3-methyl-1, 1-butanedicarboxylic acid). $(CH_3)_2CHCH_2CH(COOH)_2$; m.w. 160.09; cr.; m.p. 107; s.w.; s.al.

malonic acid, isobutyl-, diethyl ester (ethyl isobutylmalonate). $(CH_3)_2CHCH_2CH(COOC_2H_5)_2$; m.w. 216.16; col. liq.; b.p. 225; s.w.; s.al.

malonic acid, isopropyl-, diethyl ester (ethyl isopropylmalonate). $(CH_3)_2CHCH(COOC_2H_5)_2$; m.w. 202.14; col. liq.; b.p. 211-5; s.w.; s.al.

malonic acid, keto-. See mesoxalic acid.

malonic acid, methyl-. See isosuccinic acid.

malonic acid, methyl-, diethyl ester (ethyl isosuccinate). $CH_3CH(COOC_2H_5)_2$; m.w. 174.11; col. liq.; b.p. 201.4; s.w.; s.al.

malonic acid, methyl-, dimethyl ester (dimethyl methylpropanedioate; methyl isosuccinate). $CH_3CH(COOCH_3)_2$; m.w. 146.08; col. liq.; b.p. 179; s.w.; s.al.

malonic acid, monoethyl ester, piperazinium salt. $C_4H_{10}N_2 \cdot 2HOOCCH_2COOC_2H_5$; m.w. 350.22; wh. cr.; m.p. 144; s.w.; s.al.

malonic acid, piperazinium salt. $C_4H_{10}N_2 \cdot C_3H_4O_4$; m.w. 190.13; wh. cr.; s.w.; s.al.

malonic acid, propyl- (propylpropanedioic acid; 1, 1-butanedicarboxylic acid). $C_3H_7CH(COOH)_2$; m.w. 146.08; pl.f.bz.; m.p. 96; s.w.; s.al.

malonic acid, propyl-, diethyl ester. $C_3H_7CH(COOC_2H_5)_2$; m.w. 202.14; col. liq.; b.p. 221; s.w.; s.al.

malonic diamide. See malonamide.

malonic dinitrile. See malononitrile.

malonic ester, anilino-. See malonic acid, anilino-, ethyl ester.

malonic ester, ethyl-. See malonic acid, ethyl-, diethyl ester.

malonic mononitrile. See acetic acid, cyano-.

malonic mononitrile, methyl-. See propionic acid, α-cyano-.

malononitrile (propanedinitrile; methylene cyanide; malonic dinitrile). $CH_2(CN)_2$; m.w. 66.03; col. cr.; m.p. 32.1; b.p. 220; s.w.; s.al.

malourea. See barbital.

malt. Barley or other grain whose starch is partially converted into dextrin and maltose by the enzyme, diastase. Used as coloring agent, for brewing, and in medicine.

malt sugar. See maltose.

maltase. Enzyme that causes the

hydrolysis of maltose.

maltha. A viscous, natural bitumen which hardens quickly in air, is insoluble in water and completely soluble in carbon disulfide.

malthene. Constituent of asphalt soluble in petroleum ether and not volatile below 325° F when heated for 7 hours.

malting. Process of converting barley, rye, wheat or other suitable grains into malt.

maltobiose. See maltose.

maltodextrin. Co-ordination compound of maltose and a non-reducing dextrin.

maltonic acid. See d-gluconic acid.

maltose (malt sugar; maltobiose). $C_{12}H_{22}O_{11}\cdot H_2O$; m.w. 360.19; fine col. need.; s.w.; s.al.

maltose figure. Measure of diastatic activity.

mandarin oil. See oil, mandarin.

mandelic acid (dl) (dl-phenylglycolic acid; dl-a-hydroxy-a-toluic acid). $C_6H_5CH(OH)(COOH)$; m.w. 152.06; col. rhomb. f.bs.; m.p. 118.1; s.w.; s.al.

mandelic acid, o-amino-, lactam. See oxindole, 3-hydroxy-.

mandelic acid, gentiobioside. See amygdalic acid.

mandelic acid, p-isopropyl-(i) (i-p-isopropylphenylglycolic acid). $(CH_3)_2CHC_6H_4CHOHCOOH$; m.w. 194.11; m.p. 158.

mandelonitrile (dl) (dl-benzaldehyde cyanohydrin). $C_6H_5CH(OH)CN$; m.w. 133.06; yel. oily liq.; m.p. −10; i.w.; s.al.

mandelonitrile (dl), gentiobioside. See amygdalin.

manganar. Manganese arsenate.

manganate. Salt containing the divalent radical, $MnO_4^{=}$, e.g. potassium manganate, K_2MnO_4.

manganate, per-. Salt of permanganic acid containing the monovalent radical, MnO_4^{-}, e.g. potassium permanganate, $KMnO_4$.

manganblende. See alabandite.

manganese. Mn; at. wt. 54.93; cub. or tetr. gray-pink met.; s.g. 7.20; m.p. 1260; b.p. 1900; used in special alloys.

manganese acetate. $Mn(C_2H_3O_2)_2\cdot 4H_2O$; monocl. pa. red.; s.g. 1.589; s.w.; s.al.; m.w. 245.04; mordant in dyeing textiles; chemical catalyst; paint and varnish drier; tanning and finishing leather.

manganese ammonium phosphate. $MnNH_4PO_4\cdot H_2O$; m.w. 186.00; wh. cr.; i.al.

manganese ammonium sulfate. $MnSO_4\cdot(NH_4)_2SO_4\cdot 6H_2O$; m.w. 391.22; monocl. pa. red; s.g. 1.83; s.w.

manganese arsenide (kaneit). MnAs; m.w. 129.86; blk.; s.g. 5.55; i.w.

manganese arsenide. Mn_2As; m.w. 184.79; m.p. 1400; i.w.

manganese arsenide. Mn_3As; m.w. 239.72; magnetic; i.w.

manganese arsenite. $Mn_3H_6(AsO_3)_4\cdot 2H_2O$; m.w. 698.59; rose red.; i.w.

manganese benzoate. $Mn(C_7H_5O_2)_2\cdot 3H_2O$; m.w. 351.05; flat pr.; s.w.

manganese borate. MnB_4O_7; m.w. 210.21; wh. powd.; s.w.; varnish, oil drier.

manganese boride. MnB_2; m.w. 76.57; gray-vlt. cr.; s.g. 6.9.

manganese bromide. $MnBr_2$; m.w. 214.76; rose red; s.w. 4.385 [25]; s.w.

manganese bromide. $MnBr_2\cdot 4H_2O$; m.w. 286.82; monocl. rose-red, deliq.; s.w.

manganese bronze. An alloy, containing copper, tin, manganese, and zinc, especially resistant to the corrosive action of sea water.

manganese butyrate. $Mn(C_4H_7O_2)_2$; m.w. 229.04; rose-red powd.; s.w.

manganese cacodylate. $Mn[(CH_3)_2AsO_2]_2$; m.w. 328.88; redsh.-wh. cr. powd.; s.w.

manganese carbide. Mn_3C; m.w. 176.79; tetrahedral; s.g. 6.89 [17].

manganese carbonate (rhodochrosite). $MnCO_3$; m.w. 114.93; trig. rose pink or amor. lt. br. powd.; s.g. 3.125; i.al.

manganese chloride (scacchite). $MnCl_2$; m.w. 125.84; cub. pink. deliq.; s.g. 2.977 [25]; m.p. 650; b.p. 1190; s.w.; s.al.

manganese chloride. $MnCl_2\cdot 4H_2O$; m.w. 197.91; monocl. rose, deliq.; s.g. 2.01; m.p. 58, $-4H_2O$ 198; b.p. 106; s.w.; s.al.

manganese chloride, per-. $MnCl_4$; m.w. 196.76; grn.; s.w.; s.al.

manganese chromite. $Mn(CrO_2)_2$; m.w. 222.95; oct. gray; s.g. 4.87.

manganese citrate. $Mn_3(C_6H_5O_7)_2$; m.w. 542.87; wh.-redsh. powd.; s.w.

manganese dithionate. MnS_2O_6; m.w. 215.05; tricl.; s.g. 1.757; s.w.

manganese ferrocyanide. $Mn_2Fe(CN)_6\cdot 7H_2O$; m.w. 447.86; grnsh.-wh powd.; i.w.

manganese fluoride(ous). MnF_2; m.w. 92.93; red quad. pr. or redsh. powd.; s.g. 3.98; m.p. 856; i.w.; i.al.

manganese fluoride, sesqui-. MnF_3; m.w. 111.93; red cr.; s.g. 3.54.

manganese fluosilicate. $MnSiF_6\cdot 6H_2O$; m.w. 305.08; hex. pr., rose red; s.g. 1.903; s.w.; s.al.

manganese formate. $Mn(CHO_2)_2\cdot 2H_2O$; m.w. 180.98; rhomb.; s.g. 1.953; s.w.

manganese glycerophosphate. $MnC_3H_7O_2PO_4$; m.w. 225.00; wh. or sl. redsh. odorl. powd.; s.w.; i.al.

manganese hydroxide. $MnO(OH)_2$; m.w. 104.95; blk.-br. amor.; s.g. 2.58; s.w.; s.al.

manganese hydroxide(ic) (manganite). $Mn_2O_3\cdot H_2O$; m.w. 175.88; rhomb. br.-blk.; s.g. 3.258; i.w.

manganese hydroxide(ous) (pyrochroite). $Mn(OH)_2$; m.w. 88.95; trig. wh.-pink; s.g. 3.258 [18].

manganese iodide. MnI_2; m.w. 308.77; yelsh.-br., deliq., cr. mass.

manganese iodide (hydrated). $MnI_2\cdot 4H_2O$; m.w. 380.83; monocl. rose red. deliq.; s.w.

manganese lactate. $Mn(C_3H_5O_3)_2\cdot 3H_2O$; monocl. pa. red; s.w.; s.al.

manganese linoleate. $Mn(C_{18}H_{31}O_2)_2$; m.w. 614.43; dr. br.; paint and varnish drier, pharmaceutical products.

manganese nitrate. $Mn(NO_3)_2\cdot 6H_2O$; m.w. 287.04; monocl. rose-wh.; s.g. 1.82; m.p.; b.p. 129.4; s.w.; s.al.

manganese oleate. $Mn(C_{18}H_{33}O_2)_2$; m.w. 622.47; br. granules; i.w.; medicine, varnish drier.

manganese oxalate. $MnC_2O_4\cdot 2\frac{1}{2}H_2O$; m.w. 192.93; wh. cry. powd.; sp.gr. 2.45; m.p. d. 150; s.w.; drier.

manganese oxide(ic) (braunite). Mn_2O_3; m.w. 157.86; cub. blk.; s.g. 4.50; m.p. −O, 1080; i.w.

manganese oxide(ic). $Mn_2O_3\cdot H_2O$; m.w. 175.88; br.; s.g. 3.26; s.w.

manganese oxide(ous) (manganosite). MnO; m.w. 70.93; cub. grn.; s.g. 5.18; m.p. 1650; i.w.

manganese oxide(ous,ic) (hausmannite). Mn_3O_4; m.w. 228.79; tetr. (rhomb.) blk.; s.g. 4.70; m.p. 1705; i.w.

manganese oxide, di- (polianite, pyrolusite). MnO_2; m.w. 86.93; rhomb. blk. or br.-blk. powd.; s.g. 5.028; m.p. −O, 1080; i.w.

manganese oxide, hept-. Mn_2O_7; m.w. 221.86; dk. red oil; s.g. >1.84; m.p. < −20; s.w.

manganese oxide, tri-. MnO_3; m.w. 102.93; redsh.; deliq.; s.w.

manganese phosphate, glycero-. See manganese glycerophosphate.

manganese phosphate, meta-. $Mn_2(PO_3)_6\cdot 2H_2O$; m.w. 620.01; pink; s.w.

manganese phosphate, ortho- (ous). $Mn_3(PO_4)_2\cdot 7H_2O$; m.w. 480.94; wh.-redsh. amor. powd.; s.w.; i.al.

manganese phosphate, ortho- acid(ous). $MnHPO_4\cdot 3H_2O$; m.w. 205.00; rhomb. red or pink powd.; s.w.; i.al.

manganese phosphate, pyro-. $Mn_2P_2O_7$; m.w. 283.90; monocl. br.-pink; s.g. 3.707 [25]; i.w.

manganese phosphate, pyro- (hydrated). $Mn_2P_2O_7\cdot 3H_2O$; m.w. 337.95;. amor. wh. powd.; i.w.

manganese phosphide. MnP; m.w. 85.95; dk. gray; s.g. 5.39 [21]; i.w.

manganese phosphide. Mn_3P_2; m.w. 226.83; dk. gray; s.g. 5.12; m.p. 1095; i.w.

manganese phosphite. $MnHPO_3\cdot H_2O$; m.w. 152.97; redsh.; m.p. $-H_2O$ 200; s.w.

manganese phosphite, hypo-. $Mn(H_2PO_2)_2\cdot H_2O$; m.w. 203.02; rose red cr. or powd.; s.w.; i.al.

manganese potassium sulfate(ic). $MnK(SO_4)_2\cdot 12H_2O$; m.w. 502.34; cub. (oct.) vlt.

manganese resinate. $Mn(C_{20}H_{29}O_2)_2$; m.w. 662.39; dk. br.-blk.; i.w.; drier.

manganese selenate. $MnSe_2O_4\cdot 2H_2O$; m.w. 234.16; s.g. 2.95-3.01.

manganese selenate. $MnSeO_4\cdot 5H_2O$; m.w. 288.21; s.g. 2.33-.39.

manganese selenite. $MnSeO_3\cdot 2H_2O$; m.w. 218.16; s.w.

manganese selenite, pyro-. $MnSe_2O_5\cdot 5H_2O$; m.w. 311.35; s.w.

manganese silicate (rhodonite, hermannite). $MnSiO_3$; m.w. 130.99; tricl. red.; s.g. 3.72 [25]; m.p. 1323; i.w.

manganese silicide. MnSi; m.w. 82.99; tetrah. s.g. 5.90 [15]; m.p. 1280; i.w.

manganese silicide(ous). Mn_2Si; m.w. 137.92 quad. pr.; s.g. 6.20 [15]; m.p. 1316; i.w.

manganese silicide, di-. $MnSi_2$; m.w. 111.05; gray oct.; s.g. 5.24 [15]; i.w.

manganese steel. Steel containing 10-15% manganese; sp.gr. 7.81; m.p. 1510; used for safes, axles, and machining parts.

manganese sulfate(ic). $Mn_2(SO_4)_3$; m.w. 398.04; grn. cr., deliq.; m.p. d. 160.

manganese sulfate(ous). $MnSO_4$; m.w. 150.99; reddish; s.g. 3.25; m.p. 700; s.w.; s.al.

manganese sulfate(ous) (szmikite). $MnSO_4\cdot H_2O$; m.w. 169.01; monocl. pa. pink; s.g. 2.95; m.p. stab. 57-117; s.w.

manganese sulfate(ous). $MnSO_4\cdot 2H_2O$; m.w. 187.02; s.g. 2.526 [15]; m.p. stab. 40-57; s.w.

manganese sulfate(ous). $MnSO_4\cdot 3H_2O$; m.w. 205.04; s.g. 2.356 [15]; m.p. stab. 30-40; s.w.

manganese sulfate (common form) (ous). $MnSO_4\cdot 4H_2O$; m.w. 223.05; monocl. or rhomb. pink effl.; s.g. 2.107; m.p. stab. 18-30; s.w.; i.al.

manganese sulfate(ous). $MnSO_4\cdot 5H_2O$; m.w. 241.07; tricl. rose; s.g. 2.103; m.p. stab. 8-18; s.w.

manganese sulfate(ous). $MnSO_4\cdot 6H_2O$; m.w. 259.08; m.p. stab. −5 to +8; s.w.

manganese sulfate(ous). $MnSO_4\cdot 7H_2O$; m.w. 277.10; rhomb. or monocl. red; s.g. 2.092 m.p. $-7H_2O$, 280; b.p. stab. −10 to −5; s.w.; i.al.

manganese sulfide(ic) (hauerite). MnS_2; m.w. 119.05; cub. blk.; s.g. 3.463; i.w.

manganese sulfide(ous) (alabandite). MnS; m.w. 86.99; cub. grn. or amor. pink; s.g. 3.99; s.w.; s.al.

manganese sulfide(ous). $3MnS\cdot H_2O$; m.w. 278.99; gray-pink; s.w.

manganese tartrate. $MnC_4H_4O_6$; m.w. 202.96; wh. powd.; s.w.

manganese thiocyanate. $Mn(CNS)_2\cdot 3H_2O$; m.w. 225.11; deliq.; m.p. $-3H_2O$, 160-70; s.w.; s.al.

manganese valerate. $Mn(C_5H_9O_2)_2\cdot 2H_2O$; m.w. 293.10; br. powd.; s.w.

manganic. Designation for compounds containing trivalent manganese, e.g. manganic oxide, Mn_2O_3.

manganic acid, per-. $HMnO_4$; m.w. 119.94 in soln. only; s.w.

manganin. An alloy of copper, manganese, and nickel (82:15:3); sp.gr. 8.5; has very small change of electrical resistance with temperature hence employed in making standards of resistance.

manganite (gray manganese ore). A mineral, $Mn_2O_3\cdot H_2O$; rhomb., iron blk. to steel gray; sp.gr. 4.2-4.4; hardness 4-5.

manganocyanhydric acid. $H_4Mn(CN)_6$; m.w. 215.01; i.w.; s.al.

manganosite. A mineral, MnO; cub., emer. grn., blk. on expos.; sp.gr. 5.18; hardness 5-6.

manganous. Designation for compounds containing divalent manganese, e.g. manganous chloride, $MnCl_2$.

mangrove. Tanning material containing 35-40% tannin obtained from the mangrove, rhizophora mangle.

mangrove bark. See mangrove.

manihot. See tapioca starch.

Manila gum. See gum, Manila.

Manila loba gum. See gum Manila loba.

manioc. See tapioca starch.

manna. Sweet hard sap of manna ash, fraxinus ornus, containing 30-60% mannitol, $C_6H_{14}O_6$; used in medicine.

d-mannitol (d-mannite). $CH_2OH(CHOH)_4CH_2OH$; m.w. 182.11; col. rhomb. need.; m.p. 166.1; b.p. 295 [3.5]; s.w.

d-mannitol, hexanitrate (nitromannite). $C_6H_8(NO_3)_6$; m.w. 452.11; need.; m.p. 112; i.al.

d-mannoheptitol. See perseitol.

d-mannoheptose. $C_6H_7(OH)_6CHO$; m.w. 210.11; need.; m.p. 134-5; s.w.; s.al.

Mannol. Ethyl acetanilide.

d-mannose (seminose; carubinose). $CH_2OH(CHOH)_4CHO$; m.w. 180.09; col. rhomb. pr.f.al.; m.p. 132; s.w.; s.al.

d-mannose, phenylhydrazone. $C_{18}H_{22}O_5NNHC_6H_5$; m.w. 270.16; nearly col.; m.p. 186-8; i.w.; s.al.

manometer. Instrument for measuring pressure.

manometric efficiency (pressure efficiency). Pressure developed by a fan divided by the pressure against a plane surface due to a velocity equal to peripheral speed of the rotor.

mantissa. In a logarithm such as 3.4082, the decimal portion, or part following the decimal point, in the above, .4082.

mantle, gas. See gas mantle.

mantle, incandescent. See gas mantle.

mantle rock. See rock mantle.

Manucol. Sodium alginate.

manure salts. Fertilizer containing large percentage potassium chloride.

Maprofix. A sulfated fatty alcohol used as a wetting agent and detergent in the textile industry.

Mapromin. A sulfated fatty alcohol used as a wetting agent in the textile industry.

mapromol. A sulfated fatty alcohol used as a wetting agent in the textile industry.

maranta. See arrowroot.

marble. Compact, polishable variety of limestone used in building.

Marblette. Synthetic tar-acid resin.

Marbolith. Synthetic tar-acid resin.

marc. Stem and skin residue of grapes used in preparation of verdigris.

marcasite (white iron pyrites). A mineral, FeS_2, rhomb., pa. yel. to steel gray; sp.gr. 4.61-4.90; hardness 6.0-6.5.

margaric acid (heptadecanoic acid; n-heptadecoic acid; n-heptadecylic acid). $CH_3(CH_2)_{15}COOH$; m.w. 270.27; col. pl.; m.p. 60.66; b.p. 227 [100]; i.w.; s.al.

margarine. See oleomargarine.

margarite (calcium mica). $H_2CaAl_4Si_2O_{12}$; a mica-chlorite transition product; gr., yel., purple; sp.gr. 2.99-3.08.

margaronitrile (heptadecanenitrite; cetyl cyanide; n-hexadecyl cyanide). $CH_3(CH_2)_{15}CN$; m.w. 251.27; cr.; m.p. 53; s.al.

marialite. A mineral, $3NaO_2\cdot 3Al_2O_3\cdot 18SiO_2\cdot 2NaCl$; tetr.; sp.gr. 2.50-2.692; hardness 5.5-6.0.

marjoram oil. See oil, marjoram.

Markownikoff's rule. In addition re-

actions in organic chemistry, the more negative atom or group tends to unite with that carbon atom which carries the smaller number of hydrogen atoms.

marl. Readily friable cement, usually containing calcareous clay, cement.

marmatite. A variety of zinc blende where the zinc is partially replaced by iron and manganese.

Marme's reagent. A reagent for alkaloids containing potassium and cadmium iodides.

Marquis' reagent. A formaldehyde-sulfuric acid reagent for alkaloids.

marrubium. See horehound.

Mars pigments. Pigments (yellow, orange, brown, red and violet) of fine hue and permanence made by calcining the precipitate from a mixture of calcium hydroxide and iron sulfate.

Marseilles soap. Castile soap.

marsh gas. See methane.

marshite. A mineral, CuI; cub., br.; sp.gr. 5.59-5.62; hardness 2.5-3.0.

martensite. An aggregate of ferrite and extremely small (possibly submicroscopic) particle of cementite (q.v.); the early stage in the transformation of austenite characterized by needle structure and great hardness, e.g. hardened high carbon steel; a solution of carbon and iron carbide, Fe_3C in β-iron.

Marx effect. Lowering in energy of a photoelectric emission by simultaneous incidence of a lower frequency radiation than that causing the emission.

marzipan. A mixture of crushed almonds and cane sugar used in confectionery.

mascagnite. A mineral, $(NH_4)_2SO_4$; rhomb., lem. yel., yelsh., gray; sp.gr. 1.76-1.77; hardness 2.0-2.5.

mashing. Brewing process in which ground malt is agitated with water at certain definite temperatures to obtain complete extraction of grains.

masking tape. Tape used to keep paint or other coating off designated spaces.

Masonite. Composition board made from wood chips exploded under 1000 lbs./in.^{2} steam pressure. The fiber is waterproofed with paraffin base emulsion and pressed into boards.

mass action, law of. In a homogeneous process the reaction velocity is proportional to the product of the concentrations of each of the reacting molecular species.

mass, active. Effective concentration of a substance in a reaction expressed in moles per liter or (for gases) in partial pressures.

mass color (self color, overtone). Color by reflected light of a smooth surface of a paste.

mass defect. Difference between total of masses of all particles (separately determined) in an atom and the mass of the atom.

massecuite. Sugar-molasses mixture before sugar removal.

mass energy. Expression including both the ordinary energy and the binding energy to yield the mass associated with a particle.

mass number. Number representing the number of protons or neutrons in the atomic nucleus.

massicot. See lead monoxide. See lead oxide, mon-.

massicotite. See lead oxide, mon-.

Masson equation. Empirical formula for apparent molar specific volume of a dissolved substance.

masstone. A full strength color; the hue of a color not toned with white or black.

mastic, gum. See gum, mastic.

mastiche. See gum, mastic.

mastix. See gum, mastic.

masurium. Ma; at. no. 43; element discovered in 1925 by spectrum analysis occurring in the minerals columbite, sperrylite, gadolinite, etc.; m.p. 2300.

mat (matt) finish. Dull or non-glossy finish.

materion. General name for particles of mass 10^{-24} g.

mathematical symbols. *See separate section containing mathematical symbols.*

matlockite. A mineral, $PbO \cdot PbCl_2$; tetr., yelsh., or grnsh.; sp.gr. 7.21; hardness 2.5-3.0.

matrix. Symbol for a group that permits a set of equations to be handled as a single entity.

matte. The remaining sulfides of copper and iron in copper metallurgy after silica has been removed.

matter. That which occupies space; substance; that which is composed of molecules and atoms.

Matteucci effect. Difference of potential produced between ends of a twisted ferromagnetic wire when its magnetism is altered.

mauve (mauveine). A member of the safranine dyes; the first synthesized aniline dye; green prismatic crystals, soluble in alcohol and whose acid solution is blue or purple.

maximum stress. See tensile strength.

maxwell. Unit of magnetic flux; the flux thru a square centimeter normal to a field of one gauss. Absolute maxwell equals 3.3356×10^{-11} e.s.u.

Maxwell diagram. Diagram consisting of vector polygons of forces related to the different members of a framed structure or truss, one polygon present for each joint in the structure.

Maxwell distribution law. Equation representing the statistical distribution of speeds or energies of molecules of a pure gas, at a uniform temperature, and not influenced by convection currents.

Maxwell triangle. Graphical device showing the trichromatic coefficients of components of a tricolor mixture.

mayonnaise. A semi-solid emulsion of edible vegetable oil, egg yolk, or whole egg, vinegar and/or lemon juice, with salt, sugar and/or dextrose. The finished product contains not less than 50% of edible vegetable oil.

mazout. See residuum.

McCoy number. Total alpha radiation of a substance divided by alpha radiation per square centimeter in a direction perpendicular to surface of a layer of uranium oxide of indefinite thickness.

mealy. Finely blotched or mottled dyed fabric.

mean center. Point corresponding to centroid of a system of equal particles at given points.

mean error. See deviation, standard.

mean free path. The average distance traversed by a molecule between one collision and the next.

mean, geometric. See geometric mean.

mean square error. See deviation, standard.

meat meal. Meat scrap and bone mixture used as a fertilizer.

mecca lac. See shellac.

mechanical advantage. In a frictionless system, the ratio of the resistance overcome to the applied force; ratio of distance thru which the applied force moves to the distance thru which the resistance moves.

mechanical equivalent of heat. Quantity of energy which, when transformed into heat, is equivalent to unit quantity of heat; 4.18×10^7 ergs equals 1 calorie. See B.T.U.

mechanical equivalent of light, least. See least mechanical equivalent of light.

mechanical mixture. An aggregation of two or more substances which can be separated by mechanical means, e.g. a mixture of salt and sugar, or sand and iron filings.

mechanical molecule. Group of atoms which hold together when material is subjected to shearing stress.

meconic acid (3-hydroxy-4-keto-1, 4-pyran-2, 6-dicarboxylic acid). $C_7H_4O_7 \cdot 3H_2O$; m.w. 254.08; rhomb. tab.; m.p. $-3H_2O$, 100; s.w.; s.al.

meconidine. $C_{21}H_{23}NO_4$; m.w. 353.19; yel. amor.; m.p. 58; i.w.

meconin (5, 6-dimethoxyphthalide). $C_{10}H_{10}O_4$; m.w. 194.08; col. need.; m.p. 101; s.al.

median. Middle; the value in a distribution which is equalled or exceeded by exactly half of the values.

medium oil. See oil, heavy.

meerschaum (sepiolite, sea foam). A hydrated magnesium silicate, $2MgO \cdot 3SiO_2 \cdot 2H_2O$; sp.gr. 0.8-2.0; wh., gr. wh.; tobacco pipes, soaps, building; see also sepiolite.

megaline. Unit of magnetic flux equal to 1×10^6 maxwells.

megascopic. Observation made without magnifying aids.

megohm. Electrical unit of resistance equal to 1×10^6 ohms.

meionite. A mineral, $4CaO \cdot 3Al_2O_3 \cdot 6SiO_2$; tetr., col. to wh.; sp.gr. 2.70-2.815; hardness 5.5-6.0.

meiosis. Two modified mitoses in cell division during which the chromosomes divide but once.

Meissner effect. The effect that certain metals become nearly completely diamagnetic, when they are cooled below superconductivity transition point.

melam. $C_6H_9N_{11}$; m.w. 235.16; or. powd.; i.w.; s.al.

melamine (2, 4, 6-triamino-5-triazine; cyanurotriamide). $N:C(NH_2)N:C(NH_2)N:C(NH_2)$; m.w. 126.09; monocl. pr.; m.p. <250; s.w.; s.al.

melampyrin. See dulcitol.

melaniline. See guanidine, diphenyl-.

melanin. Protein of reddish-brown to black color constituting pigment of the hair and epithelial cells.

melanoidin. Brown substance of malt like odor resulting from interaction of reducing sugars with amino acids at 110-150° C.

melanterite (copperas). A mineral, $FeSO_4 \cdot 7H_2O$, monocl., var. shades of grn. to yel.; sp.gr. 1.89-1.90; hardness 2.

melene. $C_{30}H_{60}$; m.w. 420.47; col.; m.p. 63; b.p. 380; i.w.

meletin. See quercetin.

melilite. A mineral, $Na_2(Ca,Mg)_{11}(Al,Fe)_4(SiO_4)_8$; tetr., wh., yel., grnsh., redsh., br.; sp.gr. 2.9-3.4; hardness 5-6.

melilotic acid (o-hydroxyhydrocinnamic acid; o-hydrocoumaric acid). $HO \cdot C_6H_4CH_2CH_2COOH$; m.w. 166.08; pr. f.w.; m.p. 83; s.al.

melis. Affinated raw sugar washed in centifuges with steam or water.

melissic acid. $C_{30}H_{61}COOH$; m.w. 466.48; col. sc. or need. f.al.; m.p. 91.9-2.1; i.w.; s.al.

melissyl alcohol. See myricyl alcohol.

mellite. A mineral, $Al_2O_3 \cdot C_{12}O_9 \cdot 18H_2O$; tetr., yel.; sp.gr. 1.55-1.65; hardness 2.0-2.5.

mellitic acid (benzenehexacarboxylic acid). $C_6(COOH)_6$; m.w. 342.05; col. need. f.al.; m.p. 286; s.w.; s.al.

mellitic acid, hexahydro-. See 1, 2, 3, 4, 5, 6-cyclohexanehexacarboxylic acid.

mellophanic acid (1, 2, 3, 4-benzenetetracarboxylic acid). $C_6H_2(COOH)_4$; m.w. 254.05; cr.f.w.; s.w.

melonite (nickel-telluride). NiTe; sp.gr. 5.0; mineral.

melting point. See freezing point.

membrane, semi-permeable. See semi-permeable membrane.

menaccanite. See ilmenite.

mendipite. A mineral, $2PbO \cdot PbCl_2$; rhomb., wh.; sp.gr. 7-7.1; hardness 2.5-3.0.

Mendius reaction. Treatment of a nitrile with nascent hydrogen whereby four atoms of hydrogen are added to the corresponding primary amine.

menhaden oil. See oil, menhaden.

meniscus. Curved surface of a liquid in a tube produced by attraction between tube and water.

menstruum. A solvent.

1, 8 (9)-m-menthadiene. See sylvestrene.

1, 3-p-menthadiene. See α-terpinene.

1, 4 (8)-p-menthadiene. See terpinolene.

1, 5-p-menthadiene. See α-phellandrene.

1 (7), 2-p-menthadiene. See β-phellandrene.

1, 8 (9)-p-menthadiene. See limonene.

3, 6-p-menthadiene-2, 5-dione. See thymoquinone.

6, 8 (9)-p-menthadiene-2-one. See carvone.

p-menthane (4-isopropyl-1-methylcyclohexane; hexahydro-p-cymene; terpane; menthonaphthene). $CH_3C_6H_{10}CH(CH_3)_2$; m.w. 140.16; col. liq.; b.p. 169-70; i.w.; s.al.

1, 8-p-menthanediol. See terpinol.

p-menthane, 1, 4-epoxy-. See 1, 4-cineole.

p-menthane, 1, 8-epoxy-. See cineole.

2-p-menthanol. See carvomenthol.

3-p-menthanol. See menthol.

3-p-menthanone. See menthone.

d-menthene (d-3-p-menthene; d-4-isopropyl-1-methyl-3-cyclohexene). $C_{10}H_{18}$; m.w. 138.14; col. liq.; b.p. 168; s.al.

1-p-menthene. See carvomenthene.

i-1-p-menthene-6, 8-diol. See pinol, hydrate.

1-p-menthene, 6, 8-epoxy-. See dipinol.

1-p-menthen-8-ol. See α-terpineol.

8 (9)-p-menthen-2-ol. See carveol, dihydro-.

3-p-menthen-2-one. See carvenone.

8 (9)-p-menthen-2-one. See carvone, dihydro-.

4 (8)-p-menthen-3-one. See pulegone.

menthol, α-methoxyisobutyrate. See isobutyric acid, α-methoxy-, 3-p-menthyl ester.

l-menthol (l-3-p-menthanol; l-hexahydrothymol). $C_{10}H_{19}OH$; m.w. 156.16; col. trim.; m.p. 35.5; b.p. 215; s.al.

menthonaphthene. See p-menthane.

l-menthone (l-3-p-menthanone). $C_{10}H_{18}O$; m.w. 154.14; col. liq.; m.p. −6.6; b.p. 207; s.w.; s.al.

menthyl acetate. $C_{10}H_{19}OCOOCH_3$; m.w. 214.18; b.p. 227-228; peppermint flavor.

menthyl salicylate (salimenthol; samol). $C_6H_4(OH)COOC_{10}H_{19}$; m.w. 276.19 col. liq.; i.w.; s.al.; medicine.

mercaptal. Compound analogous to acetal compounds but containing sulfur, e.g. $CH_3 \cdot CH(S—C_2H_5)(S—C_2H_5)$.

mercaptan. See thioalcohol.

mercaptide. Metallic derivative of mercaptan, —HS, where the hydrogen is replaced by a metal.

mercerization. Process of treating cotton with a cold concentrated solution of sodium hydroxide which causes fibers to swell and change from hollow flattened ribbons to shorter thicker cylinders. If shrinkage is prevented by tension a silk-like luster is produced.

Merchlor. Sodium hypochlorite; a sterilizing and bleaching agent.

mercuration. Direct introduction of mercury into aromatic compounds.

mercuri ammonium bromide. $NH_2HgBr \cdot NH_4Br$; m.w. 394.50; rhbdr.; m.p. d. 180; i.w.

mercuri ammonium chloride. $NHg_2Cl \cdot 3NH_4Cl$; m.w. 611.17; red cryst. (fus. wh. ppt.); m.p. 300; i.w.

mercuri ammonium chloride. $NHg_2Cl \cdot NH_4Cl$; m.w. 504.18; cryst. (infus. wh. ppt.); s.g. 5.70; s.w.; i.al.

mercuri ammonium nitrate. $NHg_2NO_3 \cdot NH_4NO_3 \cdot H_2O$; m.w. 575.30; i.w.

mercuri ammonium iodide. $NHg_2I \cdot 3NH_4I$; m.w. 977.03; s.al

mercuri ammonium sulfate. $(NH_2)_2HgSO_4 \cdot H_2O$; m.w. 348.75; orthorhombic; m.p. $-H_2O$, 115.

mercuri ammonium sulfate. $(NHg_2)_2SO_4 \cdot 3(NH_4)_2SO_4 \cdot 4H_2O$; m.w. 1394 99.

mercuri bromide. NHg_2Br; m.w. 495.14;

yel.; i.w.

mercuri chloride. NHg_2Cl; m.w. 450.69; yel.; m.p. d. 300; i.w.

mercuri hydroxide. NHg_2OH; m.w. 432.24; brown; m.p. exp. d. in water.

mercuri iodide. NHg_2I; m.w. 542.15; i.w.

mercuri mercuric chloride. $2NHg_2Cl \cdot HgCl_2$; m.w. 1172.89; red cr.; i.w.; m.p. d. 360.

mercuri nitrate. NHg_2NO_3; m.w. 477.24; i.w.

mercuri sulfate. $(NHg_2)_2SO_4 \cdot 2H_2O$; m.w. 962.55; i.w.

mercurial tetrahedrite. See schwarzite.

mercuric. Designation for mercury salts where the mercury is divalent, e.g. mercuric chloride, $HgCl_2$.

2, 2'-mercuridifuran. See mercury, di-2-furyl-.

mercurifuran, 2-chloro-. See furan, 2-chloromercuri-.

mercuriphenol, o-chloro-. $C_6H_4OHHgCl$; m.w. 329.11; m.p. 152.5°.

mercuroammonium chloride. NH_2HgCl; m.w. 253.10; blk.; i.w.

mercurochrome 220 soluble (dibromohydroxymercurifluorescein disodium salt). $C_{20}H_8Br_2HgNa_2O_8 \cdot 3H_2O$; m.w. 804.55; irid. grn. sc.; s.w.

mercurous. Designation for mercury salts where the mercury is monovalent, e.g. mercurous chloride, HgCl. It has been proven conclusively that the mercurous ion is divalent and diatomic, e.g. mercurous chloride, Cl—Hg:-Hg—Cl.

mercuroxyammonium chloride. NH_2Hg_2OCl; m.w. 468.70; yel.; m.p. d. 200; s.w.

mercuroxyammonium hydroxide. NH_2Hg_2OOH; m.w. 450.25; yel. br. rhomb.; s.w.; m.p. d. 130.

mercuroxyammonium iodide. NH_2Hg_2OI; m.w. 560.16; br.; m.p. >128; b.p. exp.; i.w.

mercuroxyammonium nitrate. $NH_2Hg_2ONO_3$; m.w. 495.25; i.w.

mercuroxyammonium sulfate. $(NH_2Hg_2O)_2SO_4$; m.w. 962.55; wh. and yel.; s.w.

mercury. Hg; at. wt. 200.61, silv. liq., hex. met.; s.g. 13.546; m.p. −38.89; b.p. 356.9; i.w.; used in thermometers, barometers, etc.

mercury acetate(ic). $Hg(C_2H_3O_2)_2$; m.w. 318.66; wh. sc. or powd.; s.g. 3.270 s.w.; s.al.

mercury acetate(ous). $HgC_2H_3O_2$; m.w. 259.63; micaceous scales; s.w.

mercury(ic) acetate, p-aminophenyl-. $C_6H_4(NH_2)HgO_2C_2H_3$; m.w. 251.69; col. pr. m.p. 167; i.w.; s.al.

mercury(ic) acetate, p-dimethylaminophenyl-. $C_6H_4N(CH_3)_2HgO_2C_2H_3$; long. col. need.; m.p. 165; i.w.; s.al.

mercury(ic) acetate, phenyl-. $C_6H_5HgO_2C_2H_3$; m.w. 336.67; rhomb. sm. wh. lust. pr.; m.p. 149°; s.w.; s.al.

mercury acetylide(ic). $3C_2Hg \cdot H_2O$; m.w. 691.85; wh. powd.; s.g. 5.3; i.w.; i.al.

mercury arsenate, ortho- (ic). $Hg_3(AsO_4)_2$; m.w. 879.69; yel.; s.w.

mercury arsenate, ortho- (ous). Hg_3AsO_4; m.w. 740.76; dk. red; i.w.

mercury arsenate, ortho- acid(ous). Hg_2HAsO_4; m.w. 541.16; yel.-red; i.w.

mercury benzoate(ic). $Hg(C_6H_5COO)_2$; m.w. 442.69; wh. cr. powd.; m.p. 165; s.w. s.al.

mercury, biphenyl-. $(C_6H_5 \cdot C_6H_4)_2Hg$; m.w. 506.75; sm. scales; m.p. 216.

mercury boiler. Bi-fluid boiler for steam generation.

mercury bromate(ic). $Hg(BrO_3)_2 \cdot 2H_2O$ m.w. 492.47; cr.; m.p. d. 130-140; s.w

mercury bromate(ous). $HgBrO_3$; m.w. 328.53; cr.

mercury bromide(ic). $HgBr_2$; m.w. 360.44; rhomb. col.; s.g. 5.73; m.p. 236; b.p. 325; s.w.; s.al.

mercury bromide(ous). HgBr; m.w. 280.53; tetr. wh.-yel.; s.g. 7.307; m.p. subl. 345; s.w.; i.al.

mercury(ic) bromide, phenyl-. C_6H_5HgBr; m.w. 357.57; rhomb. wh. lust. tabl.; m.p. 276; i.w.; s.al.

mercury(ic) bromide, p-tolyl-. C_7H_7HgBr; m.w. 371.58; thin lust. gray sc.; m.p. 228; s.al.

mercury carbonate(ous). Hg_2CO_3; m.w. 461.22; yel.-br.; s.g. 5.07 ^{218} g/l; m.p. d. 130; i.w.; i.al.

mercury carbonate, basic(ic). $2HgO \cdot HgCO_3$; m.w. 693.83; br.-red; i.w.

mercury chloramide(ic). $HgNH_2Cl$; m.w. 252.09; wh. powd. or sm. pr.; i.w.

mercury chlorate(ic). $Hg(ClO_3)_2$; m.w. 367.52; need.; s.g. 4.998; s.w.

mercury chlorate(ous). $HgClO_3$; m.w. 284.07; rhomb. wh.; s.g. 6.409; m.p. d. 250; s.w.; s.al.

mercury chloride(ic) (corrosive sublimate). $HgCl_2$; m.w. 271.52; rhomb. col. or wh. powd., pois.; s.g. 5.42; m.p. 275; b.p. 301; s.w.; s.al.

mercury chloride(ous) (calomel). HgCl; m.w. 236.07; tetr. wh.; s.g. 7.150; m.p. 302 b.p. 383.7; s.w.; i.al.

mercury chloride, bi-. See mercury chloride(ic).

mercury(ic) chloride, ethyl-. C_2H_5HgCl; m.w. 265.11; silv. irid. leaf.; s.g. 3.5 m.p. 192.5; i.w.; s. hot al.

mercury chloride, furan. See furan, 2-chloromercuri-.

mercury chloride, furyl-. See furan, 2-chloromercuri-.

mercury(ic) chloride, methyl-. CH_3HgCl; m.w. 251.09; wh. cr., disg. odor.; s.g. 4.063 m.p. 170; b.p. volat. 100.

mercury chloride, phenyl- (chloromercuribenzene). C_6H_5HgCl; m.w. 313.11; wh. satiny leaf.; m.p. 251; s.al.

mercury(ic) chloride, p-tolyl-. C_7H_7HgCl; m.w. 327.12; rhomb. silky tabl.; m.p. 233; i.w.

mercury chromate(ic). $HgCrO_4$; m.w. 316.62; rhomb. red.

mercury chromate(ous). Hg_2CrO_4; m.w. 517.23; red. need. or powd.; s.w.; i.al.

mercury citrate(ous). $Hg_3(COO)_3CH_2COH \cdot CH_2$; m.w. 790.87; wh. powd.; s.w.

mercury cyanide(ic). $Hg(CN)_2$; m.w. 252.63; tetr. col. or wh. powd.; pois.; s.g. 4.00; s.w.; s.al.

mercury(ic) cyanide, phenyl-. C_6H_5HgCN; m.w. 303.66; rhomb. long pr.; m.p. 204; s. hot w.; s. hot al.

mercury, dibenzyl-. $(C_7H_7)_2Hg$; m.w. 382.72; long brittle col. need.; s.al.

mercury, di-2-furyl- (2, 2'-mercuridifuran). $C_4H_3O \cdot Hg \cdot C_4H_3O$; m.w. 334.66; col. cr.; f.w.-acet.; m.p. 114; b.p. 156 ^{7}.

mercury, diisobutyl-. $(C_4H_9)_2Hg$; m.w. 314.75; col. liq.; s.g. 1.835 ^{15}; m.p. volat. 100; b.p. 205-7; s.w.; s.al.

mercury, dimethyl-. $(CH_3)_2Hg$; m.w. 230.66; col. liq., sweet odor; s.g. 3.069; m.p. 93-96; s.al.

mercury, p-dimethylaniline-. $[C_6H_4N(CH_3)_2]_2Hg$; m.w. 440.78; lust. need.; m.p. 169; s.al.

mercury, di-1-naphthyl- (mercury di-α-naphthyl). $Hg(C_{10}H_7)_2$; m.w. 454.72; leaf. f.bz.; m.p. 243; i.w.; s.al.

mercury, diphenyl-. $(C_6H_5)_2Hg$; m.w. 354.69; wh. glassy need.; s.g. 2.29-2.34; m.p. 120 subl.; b.p. 204 $^{10.5}$; i.w.; s. hot al.

mercury, dipropyl-. $(C_3H_7)_2Hg$; m.w. 286.72; col. mobile liq.; s.g. 2.124 ^{16}; b.p. 189-91; i.w.; s.al.

mercury, o-ditolyl-. $C_7H_7HgC_7H_7$; m.w. 382.72; wh. tabl.; m.p. 107; b.p. 219 ^{14}.

mercury, di-p-tolyl-. $Hg(C_6H_4CH_3)_2$ m.w. 382.72; col. need. f.bz.; m.p 235-9; i.w.; s.al.

mercury fluoride(ic). HgF_2; m.w. 238.61; cub.; s.g. 8.95 ^{15}; m.p. 645 d.; b.p. 650.

mercury fluoride(ous). HgF; m.w. 219.61; cub. yel.; s.g. 8.73; m.p. 570; s.w. d to Hg_2O.

mercury fluosilicate(ic). $HgSiF_6 \cdot 6H_2O$; m.w. 450.76; rhbdr. col.

mercury fluosilicate(ous). $Hg_2SiF_6 \cdot 2H_2O$; m.w. 579.31; col. pr.; s.w.

mercury fluosilicate, basic(ic). $HgSiF_6 \cdot HgO \cdot 3H_2O$; m.w. 613.33; yel. need.

mercury formate(ous). $HgCHO_2$; m.w 245.62; glist. scales; s.w.; i.al.

mercury fulminate(ic). $HgC_2N_2O_2$; m.w. 284.63; cub. wh.; s.g. 4.42; s.w.; s.al.

mercury hydroxide(ic). $Hg(OH)_2$; m.w. 234.63; m.p. $-H_2O$, 175; i.w.

mercury(ic) hydroxide, ethyl-. C_2H_5HgOH; m.w. 246.66; silv. irid. leaf.; m.p. 192.5; i.w.; s. hot al.

mercury iodate(ic). $Hg(IO_3)_2$; m.w. 550.45; wh. amor. powd.; i.w.

mercury iodate(ous). $HgIO_3$; m.w. 375.53; yelsh.; i.w.

mercury iodide(ous). HgI; m.w. 327.53; tetr. or amor. powd., yel.; s.g. 7.70; m.p. subl. 140; 290 d.; b.p. 310 d.; s.w.; i.al.

mercury(ic) iodide, methyl-. CH_3HgI; m.w. 342.55; col. pearly leaf; m.p. 145; i.w.; s.al.

mercury iodide(ic), red. HgI_2; m.w. 454.45; tetr. red., cr. or powd.; s.g. 6.283; m.p. tr. 130; s.w.; s.abs.al.

mercury iodide(ic), yellow. HgI_2; m.w. 454.45; rhomb. yel., cr. or powd.; s.g. 6.271; m.p. 259; b.p. 354; s.w.; s.al.

mercury iodobromide(ic). HgIBr; m.w. 407.45; rhomb. yel.; m.p. 229; b.p. 360.

mercury iodochloride(ic). HgICl; m.w. 362.99; rhomb. red.; m.p. 153; b.p. 315; i.w.; s.al.

mercury mercaptide. $Hg(SC_2H_5)_2$; m.w. 322.81; leaf. f.al.; m.p. 76; s.w.

mercury nitrate(ic). $Hg(NO_3)_2$; m.w. 324.63; wh.-yel. deliq. powd.; s.g. 4.39; m.p. 79; s.w.; i.al.

mercury nitrate(ic). $Hg(NO_3)_2 \cdot 2H_2O$; m.w. 360.66; col. cr. or wh. deliq. powd., pois.; s.w.; i.al.

mercury nitrate(ous). $HgNO_3 \cdot H_2O$; m.w. 280.63; monocl. col. effl.; s.g. 4.79 ^{4}; m.p. 70.

mercury(ic) nitrate, phenyl-. $C_6H_5HgNO_3$; m.w. 339.66; rhomb. tabl.; m.p. 176-86; i.w.; s. hot al.

mercury nitride(ic). Hg_3N_2; m.w. 629.85; br. powd.; m.p. exp.

mercury nitride, tri- (ous). HgN_3; m.w. 242.63; wh. cr.; exp. d. by light; s.w.

mercury oxalate(ic). HgC_2O_4; m.w. 288.61; i.w.

mercury oxalate(ous). $Hg_2C_2O_4$; m.w. 489.22; i.w.

mercury oxide(ic) (montroydite). HgO; m.w. 216.61; rhomb. yel. or red; s.g. 11.14; m.p. d. 100; s.w.; i.al.

mercury oxide(ous). Hg_2O; m.w. 417.22; blk.-brnsh. powd.; s.g. 9.8; m.p. d. 100; s.w.

mercury oxybromide(ic). $HgBr_2 \cdot 3HgO$; m.w. 1010.27; yel. cr.; i.w.; s.al.

mercury oxychloride(ic) (kleinite). $HgCl_2 \cdot 3HgO$; m.w. 921.35; hex. yel.; s.g. 7.93; m.p. d. 260; i.w.

mercury oxycyanide(ic). $Hg(CN)_2 \cdot HgO$; m.w. 469.24; need. or wh. cr. powd.; s.g. 4.437 ^{19}; m.p. exp.; s.w.

mercury oxyfluoride(ic). $HgF_2 \cdot HgO \cdot H_2O$; m.w. 473.24; yel. cr.; m.p. d. 100.

mercury oxyiodide(ic). $HgI_2 \cdot 3HgO$; m.w. 1104.28; yel. br.

mercury phosphate, ortho- (ic). $Hg_3(PO_4)_2$; m.w. 791.87; wh.-yelsh. powd.; i.w.; i.al.

mercury phosphate, ortho- (ous). Hg_2PO_4; m.w. 696.85; col.; i.w.

mercury potassium cyanide(ic). $Hg(CN)_2 \cdot 2KCN$; m.w. 382.84; col. cr. pois.; s.w.; s.al.

mercury potassium iodide(ic). $2HgI_2 \cdot 2KI \cdot 3H_2O$; m.w. 1294.99; yel., deliq.; s.al.

mercury potassium tartrate(ous). $HgKC_4H_4O_6$; m.w. 387.74; wh. cr. powd.; i.w.; i.al.

mercury selenide(ic) (tilmanite). HgSe; m.w. 279.81; gray plates; s.g. 7.1-8.9; m.p. subl.; i.w.

mercury silver iodide(ic). $HgI_2 \cdot 2AgI$; m.w. 924.05; deep-yel. powd.; i.w.

mercury sulfate(ic). $HgSO_4$; m.w. 296.67; rhomb. col. or wh. powd.; s.g. 6.47; i.al.

mercury sulfate(ous). Hg_2SO_4; m.w. 497.28; monocl. col., wh.-yelsh. powd. s.g. 7.56; s.w.

mercury sulfate, basic(ic). $HgSO_4 \cdot 2HgO$; m.w. 729.89; lem. yel. powd. s.g. 6.44; b.p. volat.; s.w.; i.al.

mercury sulfide(ic) (α) (cinnabarite). HgS; m.w. 232.67; hex. red cr. or powd.; s.g. 8.09; m.p. subl. 580; s.w. i.al.

mercury sulfide(ic) (β). HgS; m.w. 232.67; cub. blk. or amor. powd.; s.g. 7.67; m.p. subl. 580; i.w.; i.al.

mercury sulfide(ous). Hg_2S; m.w. 433.28; blk.; m.p. d. 0; i.w.

mercury tartrate(ous). $Hg_2C_4H_4O_6$; m.w. 549.25; yelsh.-wh. cr. powd.; i.w.

mercury tartrate, bi- (ous). $HgHC_4H_4O_6$; m.w. 349.65; wh. cr. powd.; i.w.

mercury thiocyanate(ic). $Hg(CNS)_2$; m.w. 316.74; wh. powd. pois.; s.w.; s.al.

mercury thiocyanate(ous). HgCNS; m.w. 258.68; i.w.

mercury tungstate(ic). $HgWO_4$; m.w. 448.61; yel.; i.w.; i.al.

mercury tungstate(ous). Hg_2WO_4; m.w. 649.22; yel. amor.; i.w.; i.al.

mercury vapor lamp. A type of lamp producing light predominantly in the ultra-violet region, by means of an electric discharge passing thru a tube containing mercury vapor; used in therapy and photography.

meridian. Line perpendicular to the optical axis.

Merpentine. A sodium alkyl naphthalene sulfonate product used as a wetting agent and dyeing assistant in the textile industry.

Merpol. A long-chain alcohol sulfate used as a detergent, wetting agent and dyeing assistant in the textile industry.

Mersenne law. Frequency of a vibrating string varies inversely with its length and square root of the line density and directly with square root of tension.

Mertec. A chlorinated rubber base paint, used in acid and alkali resisting paints.

mesaconic acid (methylfumaric acid). $HOOC(CH_3)C{:}CHCOOH$; m.w. 130.05; col. need. f.w. or al.; m.p. 202-4; s.w.; s.al.

mescaline (mezcaline). $C_{11}H_{17}NO_3$; m.w. 211.14; col. alk. oil.; b.p. 180 ^{13}; s.w.; s.al.

mesh. One of the small openings in a woven material, e.g. in lace manufacture, a completed opening in the fabric requiring two bobbin and two warp threads; measure of fineness of a screen or sieve, e.g. a 400 mesh sieve has 400 openings per linear inch.

mesidine (2, 4, 6-trimethylaniline). $(CH_3)_3C_6H_2NH_2$; m.w. 135.11; liq.; m.p. < −15; b.p. 233.

mesitol (2, 4, 6-trimethylphenol; 2-hydroxymesitylene). $(CH_3)_3C_6H_2OH$; m.w. 136.09; need.; m.p. 69; b.p. 220; s.w.; s.al.

mesitylene (1, 3, 5-trimethylbenzene; symtrimethylbenzene). $(CH_3)_3C_6H_3$; m.w. 120.09; rhomb. col. liq.; m.p. −52.7; b.p. 164.6; i.w.; s.al.

mesitylene, α-bromoisobutyryl-. See isobutyrophenone, α-bromo-2, 4, 6-trimethyl-.

mesitylene-eso-carboxylic acid. See β-isodurylic acid.

mesitylene, 2, 4-dihydroxy-. See mesorcinol.

mesitylene, 2, 4-dinitro- (1, 3, 5-trimethyl-2, 4-dinitrobenzene). $(NO_2)_2C_6H(CH_3)_3$; m.w. 210.09; rhomb. f.al. m.p. 86; i.w.; s.al.

mesitylene, hexahydro-. See cyclohexane, 1, 3, 5-trimethyl-.

mesitylene, 2-hydroxy-. See mesitol.

mesitylene, 2-nitro- (1, 3, 5-trimethyl-2-nitrobenzene). $(CH_3)_3C_6H_2NO_2$; m.w. 165.09; rhomb. pr.f.al.; m.p. 44; b.p. 255; s.al.

mesitylene, 2, 4, 6-tribromo- $Br_3C_6(CH_3)_3$; m.w. 356.82; tricl. need

f.al.; m.p. 224; i.w.; s.al.

mesitylene, 2, 4, 6-trinitro-. $(NO_2)_3C_6(CH_3)_3$; m.w. 255.09; tricl. need. f.al.; m.p. 230-2; s.al.

mesitylenic acid (3, 5-dimethylbenzoic acid; 3, 5-xylic acid; sym-m-xylic acid). $(CH_3)_2C_6H_3COOH$; m.w. 150.08; monocl. f.al.; m.p. 166; s.w.; s.al.

mesityl oxide (4-methyl-3-penten-2-one; isopropylideneacetone). $(CH_3)_2C{:}CHCOCH_3$; m.w. 98.08; col. oily liq.; m.p. −59; b.p. 128.7; s.al.

méso-. A compound which is optically inactive due to an internal compensating rearrangement of the parts of the molecule which are optically active, e.g. mesotartaric acid; not to be confused with a racemic mixture which is inactive due to a mechanical mixture of the dextro- and levo-forms.

mesocolloid. A polymer intermediate between a hemicolloid and a eucolloid, between degrees of polymerization of 100 and 1000.

mesocystine. See cystine, meso-.

mesomeric effect. Driving force that initiates electromeric change in a conjugated system; initiates the spread of polar activation from one bond to another.

mesomorphic. See liquid crystal.

mesophilic. Class of bacteria that grows best between 20-40° C.

mesorcinol (2, 4, 6-trimethylresorcinol; 2, 4-dihydromesitylene). $(CH_3)_2C_6H(OH)_2$; m.w. 152.09; leaf.; m.p. 150; b.p. 275.5; s.w.; s.al.

mesotartaric acid. See i-tartaric acid.

mesotron. Particle having electrical charge equal to that of an electron and a mass between that of an electron and proton and which is radioactively unstable. It penetrates dense solid material.

mesoxalic acid (dihydroxy- or oxopropanedioic acid; dihydroxy- or ketomalonic acid). $(HO)_2C(COOH)_2$; or $OC(COOH)_2$; m.w. 136.03 or 118.02; col. deliq. need.; s.w.; s.al.

mesoxalic acid, diethyl ester (diethyl oxopropanedioate; ethyl ketomalonate; ethyl mesoxalate). $CO(COOC_2H_5)_2$; m.w. 174.08; lt. yel. grn. oil; m.p. *ca.* −30; b.p. *ca.* 220.

mesoxalic acid, diethyl ester, hydrate (diethyl dihydroxypropanedioate; ethyl dihydroxymalonate). $(HO)_2C(COOC_2H_5)_2$; m.w. 192.09; col. pl.f.bz.; m.p. 57; b.p. 200.

mesquite gum. A colorless to dark brown solid obtained from prosopis juliflora, resembling gum arabic in solution.

meta-. Referring to inorganic acids that are derived from the ortho-, or ordinary, form by loss of one molecule of water from each molecule of acid; referring to the modified form (usually a polymerized form) of a substance, e.g. metaformaldehyde; referring to disubstituted benzenes where the substituents are place on alternate carbons, e.g. meta-dibromobenzene,

metaacetaldehyde. See metaldehyde.

metabolism. The chemical changes involved in the processes of growth and repair in a living organism, including the building-up and breaking-down processes.

metacenter. Point, above center of mass, of a rigid body floating in equilibrium, thru which the buoyant force is presumed to act when the equilibrium of the body is disturbed.

metacinnabarite. Black cinnabar; source of mercury.

metacrolein. $(C_3H_4O)_3$; m.w. 168.09; need.; m.p. 46; b.p. 170; s.w.; s.al.

metacrystalline state. Condition when non-crystalline molecules have been so acted on that they give x-ray diffraction patterns similar to those of crystals.

metadiazine. See pyrimidine.

metadyne. D.c. armature with four brush arms per pair of poles used to convert d.c. at constant voltage to d.c. at constant current.

metaformaldehyde. See polyoxymethylene.

Metakalin. A synthetic tar-acid resin.

metal. Element which has a characteristic luster, conducts electricity, is more or less malleable and forms stable salts with acids and are further distinguished by forming basic oxides, by reacting with other elements or compounds to form a compound which possesses the metal as a positive ion and by having a high thermal conductivity.

metal, blue. Matte formed in copper smelting containing about 60% copper.

metal, noble. See noble metal.

metal, powdered. A metal in a finely-divided form with or without a fatty lubricant, e.g. aluminum bronze powder.

metal spraying. Spraying of metal to form a coating by melting metal wire in a gun and forcing out a metallic vapor by means of compressed air.

metal, white. See white metal.

metaldehyde (metaacetaldehyde). $(C_2H_4O)_x$; m.w. $(44.03)_x$; col. tetr. need.; m.p. 246.2 (sealed tube); i.w.

metalite. See abrasive.

metallic soaps. The ammonium and metallic derivatives of stearic, palmitic and oleic acid used as waterproofing agents, lubricants, product in ointments, etc.

metallization. The covering of a substance, metal or non-metal, with a coating of metal.

metallography. Physical study of constitution and internal structure of metals and alloys.

metalloid. Element possessing physical properties of metals and the chemical properties of non-metals.

metallurgy. Process of extracting metals from ores.

metamagnetic. Being either paramagnetic or diamagnetic depending upon external conditions.

metameric. Synonymous with isomeric. See isomerism.

metamorphism. Chemical and physical changes in igneous and sedimentary rocks by heat, pressure and interaction.

metamorphic rocks. Rocks changed from their original condition by metamorphism (q.v.).

metanilic acid (m-aminobenzenesulfonic acid; m-anilinesulfonic acid). $NH_2C_6H_4SO_3H \cdot 1\frac{1}{2}H_2O$; m.w. 200.15; need. (anh.), tricl. pr.

metaphase. Period during which almost no appreciable change takes place in a cell during mitosis.

metaprotein. The first hydrolysis product of protein, soluble only in acids and alkalies.

metasilicate. Salt corresponding to the acid H_2SiO_3, e.g. sodium metasilicate, Na_2SiO_3.

metastable. Condition of comparative instability which passes into a stable phase under certain conditions, e.g. supersaturated solution which crystallizes out the excess salt when jarred and passes into more stable saturated phase; atomic state of excitation where the atom will not emit radiation unless externally acted upon.

metastyrene. $(C_8H_8)_x$; m.w. $(104.06)_x$; vitreous; i.w.; i.al.

Metastyrol. A synthetic polystyrene resin.

metathesis. See double decomposition.

metathiazole. See thiazole.

metathropic. Referring to class of bacteria that feeds on organic matter.

meter. A unit of length, the distance at 0° C. between two marks on a standard platinum-iridium bar kept at Paris; also defined as 1553164.13 wave lengths of the red cadmium line measured in dry air at 15° C. and normal pressure; approximately, 39.37 inches.

meter-candle. A measure of illumination of a surface; equals 1 lumen per square meter.

methacetin. See p-acetanisidе.

methacrylic acid (2-methylpropenoic acid; α-methylacrylic acid). $CH_2{:}C(CH_3)COOH$; m.w. 86.05; col. pr.; m.p. 16; b.p. 163; s.w.; s.al.

methanal. See formaldehyde.

methanamide. See formamide.

methanamidine, amino-. See guanidine.

methane (marsh gas; methyl hydride). CH_4; m.w. 16.03; col. gas; m.p. −184; b.p. −161.5; s.al.

methane, acetylbenzoyl-. See acetone, benzoyl-.

methane, amino-. See methylamine.

methane, 4-amino-4′, 4″-bisdimethylaminotriphenyl-. See p-leucaniline, N, N′, N′, N′-tetramethyl-.

methane, aminodiphenyl-. See aniline, benzyl-.

methane, α-aminodiphenyl-. See benzylhydrylamine.

methane, aminotriphenyl-. See aniline, benzohydryl-.

methane, amyldimethyl-. See heptane, 2-methyl-.

methane, amylethylmethyl-. See octane, 3-methyl-.

methane arsonic acid (methyl arsinic acid). $CH_3AsO(OH)_2$; m.w. 139.97; monocl. leaf. f.al.; m.p. 161; s.w.; s.al.

methane azobenzene. See benzene azomethane.

methane, benzoyltriphenyl-. See β-benzopinacolin.

methane, benzyltriphenyl-. See ethane, 1, 1, 1, 2-tetraphenyl-.

methane, 4, 4′-bisdimethylaminotriphenyl-. See aniline, p, p′-benzalbis-(N, N-dimethyl)-.

methane, bis (2, 4-dinitrophenyl)- (2, 2′, 4, 4′-tetronitroditan). $[(NO_2)_2C_6H_3]_2CH_2$; m.w. 348.09; yel. pr. f. glac. ac.a.; m.p. 172; i.al.

methane, bromo-. See methyl bromide.

methane, bromotrichloro-. $CBrCl_3$; m.w. 198.29; col. liq.; m.p. −21; b.p. 104.07; i.w.; s.al.

methane, butylethylmethyl-. See heptane, 3-methyl-.

methane, sec-butylethylmethyl-. See hexane, 3, 4-dimethyl-.

methane, tert-butyltrimethyl-. See butane, 2, 2, 3, 3-tetramethyl-.

methane carbothiolic acid. See acetic acid, thiol-.

methane, chloro-. See methyl chloride.

methane, chloro (chloromethoxy)-. See ether, bischloromethyl-.

methane, chloroethylmethyl-. See sec-butyl chloride.

methane, chloromethoxy-. See ether, chloromethyl methyl.

methane, chlorotrimethyl-. See tert-butylchloride.

methane, chlorotriphenyl-. $(C_6H_5)_3CCl$; m.w. 278.57; col. need.; m.p. 112; b.p. 310; s.al.

methane, cyclohexyl-. See cyclohexane, methyl-.

methane, 4, 4′-diaminodiphenyl-. See aniline, p, p′-methylenedi-.

methane, p, p′-diaminotriphenyl- (p, p′-benzaldianiline; 4, 4′-diaminotritan). $C_6H_5CH(C_6H_4NH_2)_2$; m.w. 274.16; col. cr. f. et.; m.p. 139; s.w.; s.al.

methane, diazo- (azimethylene). CH_2N_2; m.w. 42.03; yel. pois. gas at ord. temp.; m.p. −145; b.p. −23; s.al.

methane, dibenzoyl- (1, 3-diphenyl-1, 3-propanedione). $(C_6H_5CO)_2CH_2$; m.w. 224.09; rhomb.; m.p. 72-3; b.p. 219-21 [18]; s.w.

methane, dibromo-. See methylene bromide.

methanedicarboxylic acid. See malonic acid.

methane, dichloro-. See methylene chloride.

methane, dichlorodifluoro- (difluorodichloromethane). CCl_2F_2; m.w. 120.91; col. gas.; b.p. −29.2; i.w.; s.al.

methane, dichlorodimethyl-. See propane, 2, 2-dichloro-.

methane, dichlorofluoro-. $CHCl_2F$; m.w. 102.92; liq. or gas; b.p. 14.5; i.w.; s.al.

methane, diethoxy- (formaldehyde diethylacetal; methylene diethyl ether). $CH_2(OC_2H_5)_2$; m.w. 104.09; m.p. −66.5; b.p. 88.0; s.w.; s.al.

methane, diethyl dimethyl-. See pentane, 3, 3-dimethyl-.

methane, diethylisopropyl-. See pentane, 3-ethyl-3-methyl-.

methane, diethyl methyl-. See pentane, 3-methyl-.

methane, diethylpropyl-. See hexane, 3-ethyl-.

methane, 4, 4′-dihydroxydiphenyl- (p, p′-methylenediphenol). $HOC_6H_4CH_2C_6H_4OH$; m.w. 200.09; leaf. or need. f.h.w.; m.p. 158; s.al.

methane, diisobutyl-. See heptane, 2, 6-dimethyl-.

methane, diisopropyl-. See pentane, 2, 4-dimethyl-.

methane, dimethoxy- (formaldehyde dimethylacetal; methylene dimethyl ether; formal; methylal). $CH_2(OCH_3)_2$; m.w. 76.06; col. liq.; m.p. −104.8; b.p. 44; s.w.; s.al.

methane, dimethyl-. See propane.

methane, dimethylene-. See propadiene.

methane, dimethylpropyl-. See pentane, 2-methyl-.

methane, di-1-naphthyl-. $(C_{10}H_7)_2CH_2$; m.w. 268.12; sm. pr. f.al.; m.p. 109; b.p. 270 [16].

methane, di-2-naphthyl-. $(C_{10}H_7)_2CH_2$; m.w. 268.12; need. f.al. or et.; m.p. 93; i.w.; s.al.

methane, dinitro-. $CH_2(NO_2)_2$; m.w. 106.03; yel. unst. oil; m.p. liq. at −15; s.w.; s.al.

methane diol diacetate. See acetic acid, methylene diester.

methanediol, 2-furyl-, diacetate. See furfural, diacetate.

methane, diphenyl- (benzylbenzene; ditan). $(C_6H_5)_2CH_2$; m.w. 168.09; col. rhomb. need.; m.p. 26-7; b.p. 261-2; i.w.; s.al.

methane, diphenyl, o-carboxylic acid. See benzoic acid, o-benzyl-.

methane, diphenylene-. See fluorene.

methane, diphenyl-p-tolyl- (4-methyltritan). $CH_3C_6H_4CH(C_6H_5)_2$; m.w. 258.14; pr. f. me. al.; m.p. 71; b.p. 360; i.w.; s.al.

methane, dipropoxy- (formaldehyde dipropylacetal; methylenedipropyl ether). $CH_2(OC_3H_7)_2$; m.w. 132.12; b.p. 137-40.

methanedisulfonic acid. See methionic acid.

methane, ethyldimethyl-. See butane, 2-methyl-.

methane, p-ethyldiphenyl-. See benzene, 1-benzyl-4-ethyl-.

methane, ethyldipropyl-. See heptane, 4-ethyl-.

methane, ethylisobutyl-. See hexane, 2-methyl-.

methane, ethylisobutylmethyl-. See hexane, 2, 4-dimethyl-.

methane, ethylisopropylmethyl-. See pentane, 2, 3-dimethyl-.

methane, ethylmethylpropyl-. See hexane, 3-methyl-.

methane, ethyltrimethyl-. See butane, 2, 2-dimethyl-.

methane, fluoro-. See methyl fluoride.

methane, p-hydroxydiphenyl-. See phenol, p-benzyl-.

methane, iodo-. See methyl iodide.

methane, isobutyltrimethyl-. See pentane, 2, 2, 4-trimethyl-.

methane, isopropylmethylpropyl-. See hexane, 2, 3-dimethyl-.

methane, isopropyltrimethyl-. See butane, 2, 2, 3-trimethyl-.

methane, methoxy-. See methyl ether

methane, methyldipropyl-. See heptane, 4-methyl-.

methane, methyldithio-. See methyl disulfide.

methane, methylethyl-. See butyl (n.) derivatives.
methane, methylthio-. See methyl sulfide.
methane, 1-naphthylphenyl- (1-benzylnaphthalene). $C_{10}H_7CH_2C_6H_5$; m.w. 218.11; monocl. leaf. f.al.; m.p. 59; b.p. 350.
methane, 2-naphthylphenyl- (2-benzylnaphthalene). $C_{10}H_7CH_2C_6H_5$; m.w. 218.11; monocl. pr.f.al.; m.p. 35.5; b.p. 350; i.w.
methane, nitro-. CH_3NO_2; m.w. 61.03; col. liq.; m.p. −29.2; b.p. 101.9; s.w.; s.al.
methane oxide, diphenyl-. See xanthene.
methane, oxo-. See formaldehyde.
methane, α-oxodiphenyl-. See benzophenone.
methane, phenyl-. See toluene.
methane, phenyldi-p-tolyl- (4, 4′-dimethyltritan). $C_6H_5CH(C_6H_4CH_3)_2$; m.w. 272.16; need. f.me.al.; m.p. 56; s.al.
methane, phenyl-m-tolyl- (m-benzyltoluene). $C_6H_5CH_2C_6H_4CH_3$; m.w. 182.11; liq.; b.p. 275 [747]; s.al.
methane, phenyl-p-tolyl- (p-benzyltoluene). $C_6H_5CH_2C_6H_4CH_3$; m.w. 182.11; liq.; m.p. −30; b.p. 285-6; s.al.
methanephosphonic acid (methylphosphinic acid). $CH_3PO(OH)_2$; m.w. 96.06; m.p. 105.
methane siliconic acid (silicoacetic acid). CH_3SiOOH; m.w. 76.09; amor. powd.; i.w.
methane stannonic acid (methylstannonic acid; methylstannic acid). CH_3SnOOH; m.w. 166.73; wh. amor. powd.; i.w.
methane sulfonic acid (methylsulfonic acid). CH_3SO_3H; m.w. 96.09; col. liq.; s.w.; s.al.
methane sulfonyl chloride. CH_3SO_2Cl m.w. 114.54; liq.; b.p. 160; i.w.; s.al
methane, tetrabromo-. See carbon bromide, tetra-.
methane, tetrachloro-. See carbon chloride, tetra-.
methane, tetraethoxy-. See orthocarbonic acid, tetraethyl ester.
methane, tetraiodo-. See carbon iodide, tetra-.
methane, tetramethyl-. See propane, 2, 2-dimethyl-.
methane, p, p′-tetramethyldiaminodiphenyl-. See aniline, p, p′-methylenebis[N, N-dimethyl-].
methane, p-tetramethyldiaminotriphenyl-. See leucomalachite green.
methane, tetranitro-. $C(NO_2)_4$; m.w. 196.03; col. liq.; m.p. 13; b.p. 125.7; i.w.; s.al.
methane, tetraphenyl-. $(C_6H_5)_4C$; m.w. 320.16; col. rhomb. f.bz.; m.p. 285; b.p. 431; i.w.; i.al.
methane, tetrapropoxy-. See orthocarbonic acid, tetrapropyl ester.
methanethial. See formaldehyde, thio-.
methanethiol (methyl mercaptan). CH_3SH; m.w. 48.09; liq. or gas.; m.p. −123.1; b.p. 7.6; s.al.
methanethiol, 2-furyl-. See furfuryl mercaptan.
methanethiolic acid, amino-, ethyl ester. See carbamic acid, thiol-, ethyl ester.
methane-m-tolyl- (3-methyltritan). $CH_3C_6H_4CH(C_6H_5)_2$; m.w. 258.14; pr. f.al.; m.p. 62; b.p. 354 [705]; s.al.
methane, triaminotriphenyl-. See leucaniline.
methane, tribenzoyl-. $(C_6H_5CO)_3CH$; m.w. 328.12; need. f.al.; m.p. 224-5; s.al.
methane, tribromo-. See bromoform.
methane, tribromonitro-. See bromopicrin.
methane, trichloro-. See chloroform.
methane, trichlorofluoro-. $CFCl_3$; m.w. 137.37; col. liq.; b.p. 23.7; i.w.; s.al.
methane, trichloronitro-. See chloropicrin.
methane, triethoxy-. See orthoformic acid, triethyl ester.
methane, triethyl-. See pentane, 3-ethyl-.
methane, triethylmethyl-. See pentane, 3-ethyl-3-methyl-.
methane, trifluoro-. See fluoroform.
methane, triiodo-. See iodoform.
methane, triisopropoxy-. See orthoformic acid, triisopropyl ester.
methane, trimethoxy-. See orthoformic acid, trimethyl ester.
methane, trimethyl-. See isobutane and tert-butyl derivatives.
methane, trimethylpropyl-. See pentane, 2, 2-dimethyl-.
methane, trinitro-. See nitroform.
methane, p, p, p-trinitrotriphenyl-. See methane, tris (p-nitrophenyl)-.
methane, triphenoxy-. See orthoformic acid, triphenyl ester.
methane, triphenyl-. $(C_6H_5)_3CH$; m.w. 244.12; col. rhomb. leaf.; m.p. 92.5; b.p. 359.2; s.al.
methane, triphenyl-, o-carboxylic acid. See benzoic acid, o-benzohydryl-.
methane, tripropoxy-. See orthoformic acid, tripropyl ester.
methane, tris (p-nitrophenyl)- (p, p, p-trinitrotriphenylmethane). $(NO_2C_6H_4)_3CH$; m.w. 379.13; sc.f.bz.; m.p. 212.5
methanoic acid. See formic acid.
methanol (methyl alcohol; carbinol; wood alcohol). CH_3OH; m.w. 32.03; col. liq.; m.p. −97.8; b.p. 64.65; s.w.; s.al.
methenamine. See hexamethylene tetramine.
methenyl amidoxime. See formamide oxime.
methionic acid (methanedisulfonic acid; methylenedisulfonic acid). $CH_2(SO_3H)_2$; m.w. 176.15; hyg. need.; s.w.; s.al.
dl-methionine (dl-α-amino-γ-methylmercaptobutyric acid; dl-2-amino-4-methylthiobutanoic acid). $CH_3SCH_2CH_2CH(NH_2)COOH$; m.w. 149.15; m.p. 281; s.w.
l-methionine. $CH_3SCH_2CH_2CH(NH_2)COOH$; m.w. 149.15; hex. pl.; s.w.
Methocel (Tylose). Methyl cellulose.
methoxyamine (α-methylhydroxylamine). CH_3ONH_2; m.w. 47.05; cr.; b.p. 49-50.
methoxylic index. Milligrams of CH_3O— determined by the action of 57% HI at 130-140° C. on 1 gram of material.
methyl acetate. See acetic acid, methyl ester.
methyl acetoacetate. See acetoacetic acid, methyl ester.
methyl acetone. A solution of 70-80% acetone in methyl acetate; a water-white anhydrous liquid used as a solvent and varnish remover and in the manufacture of extracts, artificial leather, rubber cements and paint.
methyl acetophenone. A colorless to pale yellow liquid with a coumarin odor and used as a perfume.
methylal. See methane, dimethoxy-.
methyl alcohol. See methanol.
methylamine (aminomethane). CH_3NH_2; m.w. 31.05; col. gas; m.p. −92.5; b.p. −6.5; s.w.; s.al.
methylamine, tert-butyl-. See propylamine, β, β-dimethyl-.
methylamine, hydrochloride. $CH_3NH_2 \cdot HCl$; m.w. 67.51; deliq.; leaf. f.al.; m.p. 226; b.p. 230 [15]; s.w.; s.al.
methylamine, mono-. See methylamine.
methylamine, naphthyl-. See naphthylamine, N-methyl-.
methyl amyl acetate (methyl isobutyl carbinol acetate). $(CH_3)_2CH \cdot CH_2CH(O_2CCH_3)CH_3$; m.w. 144.12; col. liq.; sp.gr. .853- 859; b.p. 139-147; s.al., i.w.; used as a high boiling lacquer solvent.
methyl amyl alcohol. See 2-pentanol, 4-methyl-.
methyl amyl ketone. See 2-heptanone.
methyl aniline. See aniline, N-methyl-.
Methylanon (Sextone B). See hexanone, methyl- and cyclohexanone, methyl-.
methyl anthranilate. See anthranilic acid, methyl ester.
methyl anthraquinone. See anthraquinone, 2-methyl-.
methylated spirit. Denatured alcohol for technical use.
methylation. Addition of a methyl (CH_3—) group to a compound.
m-methyl benzaldehyde. See m-tolualdehyde.
methyl benzoate. See benzoic acid, methyl ester.
methyl benzoyl benzoate. $C_6H_5 \cdot CO \cdot C_6H_4 \cdot COOCH_3$; m.w. 240.10; used as a plasticizer.
methyl blue. Sodium triphenyl-p-rosaniline sulfonate; dark blue dye; an antiseptic and a stain.
methyl borate (trimethyl borate; trimethoxyboron). $B(OCH_3)_3$; m.w. 103.89; col. liq.; b.p. 65; s.al.
methyl bromide (bromomethane). CH_3Br; m.w. 94.94; col. liq. or gas; m.p. −93; b.p. 4.6; s.w.; s.al.
methyl bromide, tert-butyl-. See propane, 1-bromo-2, 2-dimethyl-.
methyl carbitol. See diethylene glycol, monomethyl ester.
methyl cellosolve. See ethanol, 2-methoxy-.
methyl cellulose. A greaseproof, organic-acid resisting film; non-inflammable and flavor retaining, used as an emulsifying agent; thickener, binder and an adhesive.
methyl chloride (chloromethane). CH_3Cl; m.w. 50.48; col. gas; m.p. −97.6; b.p. −23.7; s.w.; s.al.
methyl cyanide. See acetonitrile.
methyl cyanide, allyl-. See 4-pentenenitrile.
methyl cyclohexane. See cyclohexanone, 2-, 3-, and 4-methyl-. A solvent for many resins, rubber, nitrocellulose, and ester gum.
methyl cyclohexanol. See cyclohexanol, methyl-.
methyl cyclohexanone. See cyclohexanone, methyl-.
methyl disulfide (methyldithiomethane; dimethyl disulfide). CH_3SSCH_3; m.w. 94.17; liq.; b.p. 116-8; i.w.; s.al.
methylene acetate. See acetic acid, methylene diester.
methylene blue (3, 9-bismethylaminophenasothionium chloride). $C_{16}H_{18}N_3SCl \cdot 3H_2O$; m.w. 373.73; grn. cr. powd.; m.p. $-2H_2O$ 100, $-3H_2O$ 150; s.w.; s.al.
methylene bromide (dibromomethane). CH_2Br_2; m.w. 173.85; col. liq.; m.p. −52.8; b.p. 98.2; s.al.
methylene chloride (dichloromethane). CH_2Cl_2; m.w. 84.93; col. liq.; m.p. −96.7; b.p. 40.1; s.al.
methylene cyanide. See malononitrile.
methylenedisulfonic acid. See methionic acid.
methylene iodide (diiodomethane). CH_2I_2; m.w. 267.86; col. liq.; leaf. m.p. 5-6; b.p. 180 d.; s.al.
methylenimine, bis (p-dimethylaminophenyl)-. See auramine (base).
methyl ether (methoxymethane; dimethyl ether). $(CH_3)_2O$; m.w. 46.05; col. gas; m.p. −138.5; b.p. −23.65; s.w.; s.al.
methyl fluoride (fluoromethane). CH_3F; m.w. 34.02; gas.; b.p. −78; s.w.; s.al.
methyl formate. See formic acid, methyl ester.
methyl heptine carbonate. See 2-octynoic acid, methyl ester.
methyl hexyl ketone. See 2-octanone.
methyl hydride. See methane.
methyl p-hydroxy benzoate (methyl parasept). $HOC_6H_4CO_2 \cdot CH_3$; m.w. 152.06; white, cryst. powd.; m.p. 126; s.w.; used in cosmetic and drug field as preservative and anti-oxidant.
methyl iodide (iodomethane). CH_3I; m.w. 141.94; col.-br. liq.; m.p. −66.1; b.p. 42.5; s.al.
methyl iodide, tert-butyl-. See propane, 1-iodo-2, 2-dimethyl-.
methyl isocyanide (methylcarbylamine; methyl isonitrile). CH_3NC; m.w. 41.03; col. liq.; m.p. −45; b.p. 59.6; s.w.; s.al.
methyl, isopropyldimethyl-. See butane, 2, 3-dimethyl-.
methyl lactate. See lactic acid, methyl ester.
methyl mercaptan. See methanethiol
methyl monochloracetate. See acetic acid, chloro-, methyl ester.
methyl mustard oil. See isothiocyanic acid, methyl ester.
methylnaphthyl ketone. See acetonaphthone.
methyl nitrate. CH_3NO_3; m.w. 77.03; liq.; s.w.; s.al.
methyl nitrite. CH_3ONO; m.w. 61.03; gas.; m.p. −17.0; b.p. −12; s.al.
methylglycolic acid. See acetic acid, methoxy-.
methyl orange (p-[p-dimethylaminophenyl azo] benzenesulfonic acid, sodium salt). $(CH_3)_2NC_6H_4N:NC_6H_4SO_3Na$; m.w. 327.19; or.-yel. powd.; s.w.; s.al.
methyl mercaptan, perchloro- (thiocarbonyl tetrachloride; trichloromethylsulfur chloride). CCl_3SCl; m.w. 185.89; yel. liq.; i.w.
methyl parasept. See methyl p-hydroxybensoate.
methylphenyl ether. See anisole.
methyl phenyl ketone. See acetophenone.
methyl phosphate (trimethyl phosphate). $(CH_3)_3PO_4$; m.w. 140.09; liq.; b.p. 193; s.w.; s.al.
methyl phthalyl ethyl glycollate. $C_6H_4(COOCH_3) \cdot COOCH_2COOC_2H_5$; m.w. 278.12; col. bitter liq.; sp.gr. 1.22; b.p. 189 (5 mm.); crystall. pt. below −10; s.w.; a solvent-plasticiser for cellulose acetate, high-boiling.
α-methyl propyl-. See corresponding sec-butyl- derivatives.
β-methyl propyl ethanoate. See acetic acid, isobutyl ester.
methyl propyl ketone. See 2-pentanone.
methyl salicylate. See salicylic acid, methyl ester.
methyl selenide (dimethyl selenide). $(CH_3)_2Se$; m.w. 109.25; liq.; b.p. 58.2; i.w.; s.al.
methyl sulfate (dimethyl sulfate). $(CH_3)_2SO_4$; m.w. 126.11; col. liq.; m.p. −31.8; b.p. 188; s.w.; s.al.
methylsulfate, acid. See sulfuric acid, methyl-.
methyl sulfide (methylthiomethane; dimethyl sulfide). $(CH_3)_2S$; m.w. 62.11; col. liq.; m.p. −83.2; b.p. 37.5; i.w.; s.al.
methyl sulfite (dimethyl sulfite). $(CH_3)_2SO_3$; m.w. 110.11; col. liq.; b.p. 126; s.al.
methylsulfonic acid. See methanesulfonic acid.
methyl telluride (dimethyl telluride). $(CH_3)_2Te$; m.w. 157.55; yelsh. liq.; b.p. 82; i.w.; s.al.
methyl, triphenyl- (trityl). $(C_6H_5)_3C$—; m.w. 243.12; col.-yel. trans. cr.; m.p. 145-7; i.w.; s.al.
metol. See phenol, p-methylamino-, sulfate.
metre. See meter.
metric system. A decimal system of weights and measures, based on the Internationally accepted units for the meter, kilogram and second.
Metso 22. A metasilicate compound used as general cleaning agent.
Metso 66. An alkaline silicate used as a detergent in metal cleaning.
Metso 99. A sodium sesquisilicate hydrate used as a detergent for general cleaning.
mexcaline. See mescaline.
mho. A unit of conductance, the reciprocal of the ohm.
miazine. See pyrimidine.
mica. A mineral which is an alkali aluminum silicate, e.g. muscovite, $H_2KAl_3(SiO_4)_3$ and phlogopite, $H_2MgAl(SiO_4)_3$, sp.gr. 2.9; used in insulation, decoration, annealing steel, and as a filler in oil-cloth and rubber.
mica, calcium. See margarite.
mica, potassium. See muscovite.
mica, white. See muscovite.
Micanite. A synthetic alkyd resin.
Micarta. A synthetic tar-acid resin.
micellae. See micella.
micella. Particles consisting of organic

molecular aggregates occurring in colloidal solutions; long chains built up of individual structural units chemically joined to one another and laid side by side to form bundles.

Michler's hydrol. See benzohydrol, p, p'-bisdimethylamino-.

Michler's ketone. See benzophenone, p, p'-bisdimethylamino-.

micro-. Prefix meaning one millionth, 10^{-6}; also meaning small.

microanalysis. Ascertaining chemical composition where quantities dealt with are not more than $\frac{1}{10}$ as large as in customary laboratory practice.

microbalance. Measuring instrument for weighing small masses with great accuracy.

microbes. See bacteria.

microchemistry. Chemical technique for small scale work, requiring highly sensitive reactions and measuring devices.

micrococcus. Referring to a spherical type of bacteria.

microcosmic salt. See stercorite and sodium ammonium phosphate.

microfarad. Unit of electrical capacity equal to 1×10^{-15} electromagnetic c.g.s. unit or abfarad.

microgram (μ g.; γ; gamma). One-thousandths of a milligram or one-millionth of a gram.

microhm. Electrical unit of resistance, equal to 1×10^{-6} ohm.

microinch. One millionth of an inch.

microline. A mineral, $K_2O \cdot Al_2O_3 \cdot 6SiO_2$; tricl., wh., yelsh., gray, grn. or red; sp.gr. 2.54-2.57; hardness 6.0-6.5.

microlite. A mineral, $6CaO \cdot 3Ta_2O_5 \cdot CbOF_2$; cub., yel., br., rare red; sp.gr. 5.405-5.562; hardness 5.5.

micrometer. Attachment or piece of apparatus used to measure very exactly such units as angles, diameters, lengths, etc., usually used on or with optical instruments.

micromicro. Prefix meaning 10^{-12}.

micromicrofarad. Unit of electrical capacity equal to 1×10^{-12} farad.

micron (μ). One thousandth of a millimeter; 10^{-4} centimeter.

micron, milli-. See millimicron.

Micronex. Gas carbon black.

microorganisms. See bacteria.

microphone. A device for picking up sound and creating in the electrical current flowing thru it pulsations which correspond to the pulsations of the sound waves.

microscopic. Of an order of magnitude requiring the aid of a microscope for observation, e.g. bacteria.

microscopic reversibility, principle of (detailed balancing; entire equilibrium, principle of). Principle stating that, when a system is in equilibrium, the number of changes of any one kind which take place is equal to the number of changes of some opposing kind occurring at the same time.

microscopy. The study and examination of matter, by means of a microscope.

microscopy, chemical. See chemical microscopy.

microtome. An instrument used in preparing materials for microscopical examination by cutting extremely thin slices.

microwaves. See ultrashort waves.

middle oil. See oil, carbolic.

middlings. Interior granular part of the wheat berry obtained by milling, producing the finest flour.

miersite. A mineral, 4AgI·CuI; cub., bright yel.; sp.gr. 5.64; hardness 2.

migration. The movement of a color in rubber causing crocking (q.v.) or staining of adjacent rubber of a different color; this movement depends upon the solubility and concentration of color pigments in rubber, e.g. a rubber insoluble color does not migrate.

migration potential. Potential difference caused by settling or whirling of charged colloidal particles.

mil. One-thousandth of an inch.

milarite. A mineral, $K_2O \cdot 4CaO \cdot 2Al_2O_3 \cdot 24SiO_2 \cdot H_2O$; hex., col., grn., glassy; sp.gr. 2.5-2.59; hardness 5.5-6.0.

mildew. See fungi.

milk albumin. See albumin, milk.

milk of lime. Slaked lime, $Ca(OH)_2$, to which salt may be added.

milk of magnesia. A fine suspension of magnesium hydroxide, $Mg(OH)_2$, in water.

milk of sulfur. See sulfur, lac.

milk stone. A mixture of milk minerals, proteins and adhering fat, formed in milk handling equipment.

milk sugar. See lactose.

mill, roller. See roller mill.

mill scale. See scale, mill.

millboard. A paper product used in binding and in making cartons.

Miller indices (Millerian indices). Indices, h, k and l, which define a crystal face, h, k and l being small whole numbers which are the numerators of the reciprocals of the intercepts on the three coordinate axes of reference when these reciprocals have been reduced to a lowest common denominator.

millerite. See nickel sulfide, mono-.

milli-. Prefix meaning one-thousandth.

millicurie. Unit of gas emanation from one milligram of radium.

milliequivalent. One-thousandth of a gram-equivalent weight of an element or compound.

milligram. One-thousandth of a gram.

millihenry. Unit of electrical inductance equal to .001 henries, 1×10^6 abhenries and 1.11263×10^{-15} stathenry.

millilambert. Measure of surface brightness equal to 0.929 lumen emitted per sq. ft.

millimeter. One-thousandth of a meter.

millimicro-. Prefix meaning 10^{-9}.

millimicron ($\mu\mu$, mμ). One-thousandth of a micron; one-millionth of a millimeter.

milling. Process of working crude rubber between powerful rollers, during which time compounding ingredients may be added.

milliphot. Measure of illumination of a surface equal to 0.001 phot and to 0.929 foot-candle.

Millon's test. A solution (Millon's reagent: $2Hg:4HNO_3$) of mercuric and mercurous nitrates producing a red coloration with proteins, due to the presence of the amino-acid, tyrosine.

milori blue. Prussian blue with slight bronze overtones; besides the ferric ferrocyanide, it may contain gypsum, alum, barium sulfate or chalk; used in the manufacture of laundry blue, lithographic and printing inks, paints, coloring soaps, and is an ingredient of fertilizer mixtures.

mimetite (mimetesite). A mineral, $3Pb_3As_2O_8 \cdot PbCl_2$; hex., yel., br., wh. or col.; sp.gr. 6.98-7.25; hardness 3.5.

mimosa bark. Product obtained from acacia mimosa, used in tanning.

mineral. Inorganic element or compound occurring naturally in the earth's crust, e.g. native copper, bauxite, etc.

mineral acids. The common strong inorganic acids, i.e. sulfuric, hydrochloric, nitric and phosphoric acids.

mineral black. Carbonaceous rock or mineral powder, used as a black pigment.

mineral cotton. See slag wool or rock wool.

mineral green. See mountain green.

mineral jelly. See petrolatum.

mineral oil. See oil, mineral and petroleum.

mineral pitch. See asphalt.

mineral rouge. See iron oxide, red.

mineral rubber (gilsonite, elaterite). A fossil resin resembling asphaltum, found only in U. S.; dark br. sol.; sp.gr. 1.065-1.070; used in varnishes and protective coatings and in insulating, paving and waterproofing.

mineral seal oil. See oil, mineral seal.

mineral spirits. A petroleum solvent; b.p. 153.3-203.9.

mineral spirits, #10. A petroleum solvent; b.p. 152.2-197.8.

mineral wax. See wax, ozokerite.

mineral wool. See slag wool and rock wool.

mineralogy. The study of rocks and minerals.

miner's inch. A unit of flow equal to 1.2 cu. ft. per minute.

minimum deviation. Deviation or change of direction of light passing thru a prism when the angle of incidence equals angle of emergence.

mining salts. A mixture of bromides and bromates, obtained in industrial preparation of ethylene dibromide.

minium. See lead, red.

Minkowski's theorem. Every event takes place in a four dimensional space-time continuum.

Mipolam. A thermoplastic vinyl chloride co-polymer.

mirabilite (Glauber salt). A mineral, $Na_2SO_4 \cdot 10H_2O$; monocl., wh.; sp.gr. 1.40-1.481; hardness 1.5-2.0.

mirbane oil. See nitrobenzene.

Misch metal. A mixture of cerium and other metals obtained from monazite sand; ferro-cerium.

miscibility. Mutual solubility.

miscible oil. See oil, soluble.

miscometer. An apparatus for sampling miscible liquids.

misenite. See potassium sulfate, acid.

mispickel. See arsenopyrite.

mitochondria. Granules in animal cells.

mitosis. Indirect cell division as opposed to amitotosis or direct cell division. There are several steps in mitosis involving segregation and splitting of the chromosomes.

Mittler's green. See Guignet green.

mix-crystal. See mixed crystal.

mixed acid (nitrating acid). A mixture of nitric and sulfuric acids of known composition used in the manufacture of dyes, T.N.T., gun-cotton and as a general nitrating agent.

mixed crystal (mix-crystal). Crystal containing two or more substances whose molecules or ions are in the same crystalline structure.

mixed glyceride. See glyceride, mixed.

mixed polymer. See co-polymer.

mixture, chemical. See chemical mixture.

mixture, constant boiling. See constant boiling mixture.

mixture, mechanical. See mechanical mixture.

mizzonite. A complex natural calcium and aluminum silicate.

mobile equilibrium. Equilibrium state which is reached in a reversible mobile process.

mobile process. A chemical process having a measurable reaction velocity under the external conditions (temperature, presence of catalyst, etc.) being considered.

mobility. Rate of change of flow of a plastic material under changing pressure.

mobility coefficient. Average speed per unit electric field at which ions of same sign move in direction of field; average speed of diffusion of molecules in a solution, at unit concentration and unit solution pressure gradient, in direction of concentration gradient.

mode. Most probable value of a variable in a statistical distribution.

modified resin. See resin, modified.

modified soda (neutral soda). Combinations of soda ash and sodium bicarbonate in definite proportions used as cleaners.

Modinal T. A long-chain alcohol sulfate used as a wetting agent, detergent and dyeing-assistant in the textile industry; a fatty alcohol sulfate used as a wetting agent, emulsifier, detergent, and as a finishing, dispersing and lubricating agent in the textile industry.

modulus. Number, coefficient, or quantity which is a measure of force, action or effect.

modulus of elasticity. Ratio of unit stress to unit strain.

modulus of rupture. Rupturing force per unit area of a test bar.

Mohr liter. Volume equal to approx. 1002.3 cc.

moissanite. See silicon carbide.

moisture factor. Weight of moist material which will give one pound of dry material.

moisture regain. The moisture present in a textile material, as determined by definite prescribed methods, expressed as a percentage of the oven-dry weight.

moisture regain, commercial. An arbitrary figure formally adopted to be used in calculating the commercial or legal weight of shipments or deliveries of any specific textile material.

moisture regain, standard. On individual samples, the moisture regain of a sample of a textile material when brought from a lower moisture regain (which may be that reached at equilibrium in any atmosphere whose relative humidity is 5-50%) into equilibrium with the standard atmosphere; the range of moisture regain values, thru which the standard moisture regain of different individual samples of the same fiber will vary, depending upon their previous history and physical condition.

mol (gram-mol; gram molecular weight). Molecular weight of a substance in grams, e.g. one mol of sulfuric acid (mol. wt. 98.08) contains 98.08 grams of the acid.

mol fraction. Number of mols of a component divided by the sum of the mols of all components in a homogeneous mixture or solution.

mol volume. Volume occupied by a gram molecular weight of a gas under standard conditions of temperature and pressure.

molal concentration. Number of mols of solute in 1000 gram of solvent.

molar concentration. The number of mols of solute in 1 liter of solution.

molar free volume. Molar volume of a substance at any temperature, while it is liquid, minus its molar volume when it begins to solidify.

molar heat. Molecular weight times specific heat of a substance.

molar rotatory power. See rotatory power, molar.

molar solution. A solution containing one gram molecular weight of the solute per liter of solution.

molarity. Concentration equal to the molar concentration (q.v.).

Moldarta. A synthetic tar-acid resin.

molding compound. A material whose separate particles can be welded together by heat and pressure to form a continuous mass in the shape of the mold cavity.

molding, extrusion. See extrusion molding.

molding, injection. See injection molding.

molding powder. Specially prepared mixture of plastic compounds, fillers, colors, etc., used for forming plastics such as Bakelite.

molding resin. Synthetic resin used in molding mixtures for producing plastics.

molding sand. A sand which is used in making molds for the casting of metals.

molds (moulds). See fungi.

molecular association. An aggregation of single molecules into complexes containing two or more of the single molecules.

molecular beam. See molecular ray.

molecular concentration, law of. Increasing the concentration of one of the reacting substances or decreasing the concentration of one of the products permits a reaction to go more nearly to completion in a given direction.

molecular conductivity. Specific conductance multiplied by volume in c.c. containing 1 gram-molecule of electrolyte.

molecular depression. The depression of freezing point produced by a gram-molecule of a substance in 100 g. of a solution.

molecular heat. The amount of heat required to raise the temperature of 1 gram-molecule of a substance 1° C.

molecular moment. Electric moment of a polar molecule.

molecular physics. Investigation of structure and behavior of molecules.

molecular pump. Vacuum pump in which molecules of a gas are carried off by friction of a high speed disc or cylinder.

molecular ray (molecular beam). A number of neutral atoms or molecules all moving in same direction so that there are no collisions between the gas particles in the beam.

molecular refraction. The sum of a series of atomic refractions.

molecular sieve. Porous material thru which small molecules may pass, e.g. dehydrated chabasite.

molecular spectrum. Band spectrum of radiation frequencies produced by energy changes inside of molecules.

molecular volume. See mol volume.

molecular weight. The weight of a substance as compared with a molecule of oxygen taken as 32; the sum of the weights of the atoms of a molecule.

molecule. The smallest unit or particle into which a substance can be divided that retains all of the chemical identity of that substance.

molecule, odd. Rare molecule with an odd number of extranuclear electrons in its nuclear state.

molecule, polar. See polar molecule.

molecule, symmetrical. See symmetrical molecule.

Mollit. A synthetic polystyrene resin.

Mollit B. Glyceryl tribenzoate.

Mollit L. Diethyl diphenyl urea.

moloxide. Initial addition-product of reaction between molecular oxygen and an unsaturated compound, e.g. pinene peroxide.

molozonide. Compounds analogous to moloxide (q.v.) with the exception that ozone is present instead of oxygen.

molybdate. Salt of molybdenum trioxide containing $-MoO_4$ group.

molybdenite (molybdenum glance). A mineral, MoS_2; hex., blue gray; sp.gr. 4.7-4.8; hardness 1.0-1.5.

molybdenum. Mo; at. wt. 95.95; cub. silv. wh. met. or gray-blk. powd.; s.g. 10.2; m.p. 2620±10; b.p. 3700; i.w.; used in special steels.

molybdenum ammonium oxychloride. $Mo(NH_4)_2OCl_5$; m.w. 325.36; rhomb. grn.

molybdenum blue. See molybdenum oxide.

molybdenum bromide, di-. $MoBr_2$; m.w. 255.83; yel.; i.w.

molybdenum bromide, tetra-. $MoBr_4$; m.w. 415.66; blk. need., deliq.; s.w.

molybdenum bromide, tri-. $MoBr_3$; m.w. 335.75; dk. grn. need.; i.w.

molybdenum carbide. MoC; m.w. 108.00; dk. gray cr. powd.; s.g. 8.40; m.p. 2570; i.w.

molybdenum carbide, di-. MoC_2; m.w. 120.00; wh. pr.; s.g. 8.9; b.p. 4500.

molybdenum chloride, di-. $MoCl_2$; m.w. 166.91; amor. yel.; s.g. 3.714 ^{25}; i.w.; s.al.

molybdenum chloride, penta-. $MoCl_5$; m.w. 273.29; blk. cr., deliq.; s.g. 2.93; m.p. 194; b.p. 268; s.al.

molybdenum chloride, tetra-. $MoCl_4$; m.w. 237.83; br. cr. deliq.; s.al.

molybdenum chloride, tri-. $MoCl_3$; m.w. 202.37; dk. red. need; s.g. 3.578 ^{25}; i.w.; s.al.

molybdenum fluoride, hexa-. MoF_6; m.w. 210.00; col. cr.; s.g. liq. 2.55; m.p. 17; b.p. 35.

molybdenum glance. See molybdenite.

molybdenum hydroxide. $MoO(OH)_3$; m.w. 163.02; light br. amor.; s.w. (coll.).

molybdenum hydroxide, bromo-. $Mo_2Br_4(OH)_2$; m.w. 641.68; red powd.

molybdenum hydroxide, chloro-. $Mo_2Cl_4(OH)_2 \cdot 2H_2O$; m.w. 499.87; amor. yel.; i.w.; s.al.

molybdenum iodide, di-. MoI_2; m.w. 349.84; amor. br.; s.g. 4.3; i.al.

molybdenum oxide (molybdenum blue). $MoO_3 \cdot xMoO_2$; dk. blue.

molybdenum oxide, di-. MoO_2; m.w. 128.00; tetr. vlt.-red; s.g. 4.516 $^{19.5}$; i.w.

molybdenum oxide, tri- (molybdite). MoO_3; m.w. 144.00; rhomb. wh.-yelsh; s.g. 4.50 $^{19.5}$; m.p. 795; b.p. subl.; s.w.

molybdenum oxide, tri-. $MoO_3 \cdot 2H_2O$; m.w. 180.03; yel.; s.g. 3.12.

molybdenum oxide, sesqui-. Mo_2O_3; m.w. 240.00; blk.; i.w.

molybdenum oxychloride. $MoOCl_4$; m.w. 253.83; grn. cr., deliq.; s.w.

molybdenum oxydibromide, di-. MoO_2Br_2; m.w. 287.83; tabl. yel.-red, deliq.; s.w.

molybdenum oxydichloride, di-. MoO_2Cl_2; m.w. 198.91; yelsh. wh.; s.w.; s.al.

molybdenum oxyfluoride. $MoOF_4$; m.w. 188.00; col.

molybdenum oxyhexachloride, tri-. $Mo_2O_3Cl_6$; m.w. 452.74; ruby-red cr.

molybdenum oxypentachloride, tri-. $Mo_2O_3Cl_5$; m.w. 417.29; dk. br. cr., deliq.; s.w.

molybdenum oxythiocyanate, basic (thiocyanate). $Mo(OH)_3(SCN)_3$; m.w. 304.22; red in aq.; s.w.

molybdenum phosphide. $MoP(Mo_2P_3)$; m.w. 127.02 (254.04); gray cr.; s.g. 6.167.

molybdenum sulfide, di- (molybdenite). MoS_2; m.w. 160.12; hex. blk.; s.g. 4.80 ^{14}; m.p. 1185; i.w.

molybdenum sulfide, sesqui-. Mo_2S_3 m.w. 288.18; steel gray need.; s.g 5.91 ^{18}; m.p. d. 1100.

molybdenum sulfide, tetra-. MoS_4; m.w. 224.24; brown powd.; i.w.

molybdenum sulfide, tri-. MoS_3; m.w. 192.18; red-br.; s.w.

molybdic acid. H_2MoO_4; m.w. 162.02; hex. yelsh.-wh.; s.g. 3.112; m.p. d. 115; s.w.

molybdic acid. $H_2MoO_4 \cdot H_2O$; m.w. 180.03; monocl. yel.; s.g. 3.124 ^{15}; m.p. $-H_2O$, 70; s.w.

molybdic acid, phospho-. See phosphomolybdic acid.

molybdite. See molybdenum oxide, tri-

molysite. See iron chloride(ic).

moment (torque). Product of a force and the distance thru which it acts.

moment of a couple. Product of magnitude of one of the forces and the perpendicular distance between lines of action of the forces.

moment of connection. Average value of the nine products of a turbulent velocity component at a point P by a turbulent velocity component at a point Q.

moment of inertia. A measure of the effectiveness of mass in rotation, being analogous to mass (inertia) in simple translation; the sum of the products of the mass and the distance from the axis of rotation of the infinitely small particles comprising a substance.

moment of momentum. See angular momentum.

moment, spin. See spin moment.

momentoid. Linear function of moments of particles of a dynamic system.

momentum. The product of mass times velocity.

momentum, principle of conservation of. In an isolated system, consisting of a number of particles in motion, colliding and attracting and repelling each other, the total momentum of the system remains constant.

monacetin. See glycerol monoacetate.

monad. Referring to a monovalent element.

Monastral blue. Copper phthalocyanine.

Monastral colors. Copper phthalocyanine or its derivatives.

monazite. A mineral, $(Ce,Nd,Pr,La)PO_4(+Th_3[PO_4]_4)$; monocl., red or yelsh. br.; sp.gr. 5.2(4.9-5.3); hardness 5.0-5.5; a source of thorium, cerium and the rare earth elements.

monazite sand. Same as monazite.

Mond gas. Combustible carbon monoxide, hydrogen and nitrogen mixture obtained by passing steam and air over hot peat or coal.

Mond process. The separation of nickel from cobalt by the formation of volatile nickel carbonyl, $Ni(CO)_4$, cobalt not forming a carbonyl.

Monel. An alloy of copper, nickel and a little iron; Ni 60-70, Cu 25-35, Fe 1-3, Mn 0.25-2, Si 0.2-1.5, and C 0.5-.3.

monetite. A mineral, $HCaPO_4$; tricl., yel., wh.; sp.gr. 2.75-2.863; hardness 3.5.

moniliform. Beaded.

monkey. Overtreated varnish base which is insoluble in melted resin, oil or solvents.

mono-. Prefix meaning one.

monoacetin. See glycerol, monoacetate.

monoamyl naphthalene. See naphthalene, amyl-.

monobasic. Referring to an acid or salt containing only one replaceable hydrogen atom.

monochromatic emissive power. The ratio of the energy of certain defined wave lengths radiated at definite temperatures to the energy of the same wave lengths radiated by a black body at the same temperature and under the same conditions.

monocline. Beds of rock inclining in a single direction.

monoclinic. Referring to crystals having two of its three axes perpendicular to the third and oblique to each other.

monoclinic terpene. See terpene, monoclinic.

monodisperse system. One whose particles are of uniform size.

monoethanolamine. See ethanol, 2-amino-.

α-monolaurin. See glycerol, 1-monolaurate.

monolayer (monomolecular layer; monomolecular film). Layer, adsorbed on a surface, having a thickness of one molecule of its constituent substance.

monomer. Simplest repeating structural unit of a polymer.

monomethyl p-amino phenol sulfate. See phenol, p-amino methyl-, sulfate.

monomial. Consisting of a single term in an algebraic expression.

monomolecular film. See monolayer.

monomolecular layer. See monolayer.

monoölein. See glycerol, 1-monoöleate.

α-monopalmitin. See glycerol, 1-monopalmitate.

monople oil. See oil, castor, sulfonated.

monopol oil. See oil, castor, sulfonated.

monosaccharide. Carbohydrate that cannot be hydrolyzed to a simpler compound whose general formula is $(CH_2O)_n$, e.g. fructose, $C_6H_{12}O_6$.

monosaccharose. See monosaccharide.

monose. See monosaccharide.

monosilane. See silicane.

α-monostearin. See glycerol, 1-monostearate.

monotonic function. Function which steadily increases or decreases with x.

monotrichous. Referring to one celled organisms having one flagellum at one end of the cell.

monotropic. Referring to substances having different crystalline forms which are not reversibly convertible.

monotropy. Irreversible polymorphism (q.v.).

monovalent. Referring to elements or radicals, having a combining power of one.

Monsanto salt (p-toluene sodium sulfonate, o-chlor-). $C_7H_6ClSO_3Na$; m.w. 228.58; gray powd.; dye intermediate; base of pigment, lake red C.

montanite. See bismuth tellurate.

montan wax. See wax, montan.

montejus. See acid egg.

monticellite. A mineral, $CaMgSiO_4$; rhomb., col. to gray; sp.gr. 3.03-3.25; hardness 5.0-5.5.

monotroydite. A mineral, HgO; rhomb., orange red; sp.gr. 11.14; hardness 1.5-2.0.

moonstone. Variety of feldspar with a pearly or opaline inner reflection; used as a gem.

moraine. Rock debris deposited by glaciers.

mordant. Substance used for fixing (rendering insoluble) dyes on fibers, e.g. aluminum salts.

mordant salt. See aluminum acetate, basic.

morenosite. See nickel sulfate.

morin (3, 5, 7, 2′, 4′-pentahydroxyflavone). $C_{15}H_{10}O_7$; m.w. 202.08; col. need.; m.p. (anh.) 285; s.al.

moringatannic acid, moringatannin. See maclurin.

morphine. $C_{17}H_{19}NO_3 \cdot H_2O$; m.w. 303.17; col. rhomb. pr., fine need. or cr. powd.

morphine, acetate (1). $C_{17}H_{18}NO_3 \cdot C_2H_4O_2 \cdot 3H_2O$; m.w. 399.23; cr. or amor. powd.; s.w.

morphine benzylether hydrochloride. See peronine.

morphine, diacetyl- (heroin). $C_{17}H_{17}(OOCCH_3)_2NO$; m.w. 369.9; wh. cr. powd.; m.p. 171-2.

morphine, diacetyl-, hydrochloride. $C_{21}H_{23}NO_5 \cdot HCl \cdot H_2O$; m.w. 423.67; wh. cr. powd.; m.p. 230-1; s.w.; s.al.

morphine, ethyl-, hydrochloride (dionin). $C_{19}H_{23}NO_3 \cdot HCl \cdot 2H_2O$; m.w. 385.68; wh. micr.-cr. powd.; s.w.; s.al.

morphine, hydrochloride. $C_{17}H_{19}NO_3 \cdot HCl \cdot 3H_2O$; m.w. 375.67; silky need. f.w.

morphine, methyl ether. See codeine.

morphine, sulfate. $(C_{17}H_{19}NO_3)_2 \cdot H_2SO_4 \cdot 5H_2O$; m.w. 758.47; wh. need. cubic f.w.

morphol (3, 4-phenanthrenediol). $C_{14}H_8(OH)_2$; m.w. 210.08; col. need.; m.p. 143; i.w.; s.al.

morphol, dimethyl ether. See phenanthrene, 3, 4-dimethoxy-.

morpholine (tetrahydro-1, 4-oxazine; diethylenimide oxide). $OCH_2CH_2NH-CH_2CH_2$; m.w. 87.08; col. liq.; sp.gr. 1.001 at 20/20° C. b.p. 128.3; s.w.; s.al.; emulsifying agent; solvent.

4-morpholineethanol (diethylene oxide 2-imino-ethyl alcohol). $O(CH_2CH_2)_2NCH_2CH_2OH$; m.w. 131.11; col. liq.; b.p. 225.5; s.w.

morpholine, 4-(β-ethoxyethyl)- (ethyl β-4-morpholylethyl ether). $O(CH_2CH_2)_2NCH_2CH_2OC_2H_5$; m.w. 159.14; col. liq.; b.p. 206; s.w.

morphology. Science of form and structure.

mortar. A mixture of slaked lime and sand (1:3 by volume) which "sets" by drying and absorbing carbon dioxide from the air; used in building-material and brick-laying.

mosaic crystal. Crystal in which the continuity of structure is interrupted on a microscopic scale, by faults like those in geological strata.

mosaic gold. See tin sulfide(ic).

Moseley diagram (Moseley curve). Graph showing relationship between atomic numbers of a series of elements and the wave lengths of their corresponding spectral lines.

Moseley's law. The square root of the frequency of a given line of an element in the x-ray spectrum is directly proportional to the atomic number of the element.

Moskene. Artificial musk.

moss, Iceland. See Iceland moss.

moss, Irish (pearl moss). Kelp found along coasts of Ireland and New England; used in the manufacture of soaps, as sizing agent, clarifying agent for chemical use, in medicine, as a nutrient and emulsifier.

moss, pearl. See moss, Irish.

moss starch. See lichenin.

mossbunker oil. See oil, menhaden.

motes (shives). Dark colored particles of raw cotton.

mother-liquor. The liquid remaining after the chief constituent, as a precipitate, has been separated from it.

mother of pearl (nacre). The hard, silvery, inner layer of oyster shells capable of high polishing; consists essentially of calcium carbonate; used for inlaying and button-making.

mother of vinegar. Microorganism (mycoderma aceti) which catalyzes oxidation of alcohol to vinegar.

motility. Ability to move about.

motion, laws of. See Newton's laws of motion.

motion, Newton's laws of. See Newton's laws of motion.

motivity. Available energy in a thermodynamic cycle.

motometer. Speed counter; speedometer.

motor benzol. Product of refining crude light oil (from coke oven gas) consisting of benzene 85%, toluene 16%, xylenes 5%.

motor depressant. Drug which lessens functional activity of organs and spinal cord.

motor spirit (petrol; gasoline). Petroleum distillate from 40 to 225° C.

motor, universal. See universal motor.

Mott effect. Partial polarization of a stream of electrons.

mottramite. A blue-green mineral; $(Cu,Pb)_5V_2O_{10}\cdot 2H_2O$.

Mouldrite. A synthetic tar-acid resin for molding and laminating; a synthetic urea resin.

moulds. See fungi.

mountain blue (copper blue). Ground azurite used as a pigment.

mountain green (mineral green). Ground malachite.

mousse de chêne. See oak moss resin.

Mowilith. A synthetic vinyl resin.

mowra oil. See oil, mowra.

mucic acid (2, 3, 4, 5-tetrahydroxyhexanedioic acid [one form]). $COOH(CHOH)_4COOH$; m.w. 210.08; col. cr. or wh. powd.; b.p. 255; i.al.

mucic acid, p-phenylphenacyl ester. $C_{34}H_{30}O_{10}$; m.w. 598.23.

mucin. Conjugated protein of the glyco-protein group, containing both protein and carbohydrate groups.

muck-bar. Bar rolled from a squeezed bloom.

muconic acid (2, 4-hexadienedioic acid). $HOOCCH:CHCH:CHCOOH$; m.w. 142.05; need. f.w.; b.p. ca. 320; s.al.

muffle. Tightly enclosed heating chamber from which products of combustion are excluded.

mulch. Protective material for roots of plants and fruits.

Mullen tester. Instrument for measuring bursting strength of paper.

mulling. Intimate mixing of pigments and liquids.

mullite. Highly refractory material of composition, $3Al_2O_3\cdot 2SiO_2$.

multiple. A number which contains another an exact number of times.

multiple emulsion. See emulsion, multiple.

multiple fission. See sporulation.

multiple proportions, law of. When two chemical elements combine to form more than one compound the weights of one element combining with a fixed weight of the other are in the proportion of small whole numbers.

multiple series. See series, multiple.

multiplet. A number of atomic spectral lines caused by transitions between different components of two multiple spectral terms.

multiplicity. Greatest number of components of any multiple term in a spectral system.

multiplicity factor (form factor). Factor of intensity of an x-ray beam that is reflected from a crystal.

mundic. See pyrrhotite.

murexan. See uramil.

murexide (ammonium purpurate). $C_8H_4O_6N_5NH_4\cdot H_2O$; m.w. 302.13; purp. powd.; s.w.; i.al.

muriatic acid. Commercial form of hydrochloric acid (q.v.).

murillo bark. See soap bark.

muscovite (white mica; potassium mica; muscovy glass). A mineral, $K_2O\cdot 3Al_2O_3\cdot 6SiO_2\cdot 2H_2O$; monocl., col. or pa. yel., gray or br.; rar. red.; sp.gr. 2.76-3.00; hardness 2.5-3.0; an important mica.

muscovy glass. See muscovite.

musk, artificial. See toluene, 3-tert-butyl-2, 4, 6-trinitro-.

musk c, musk ketone. See acetophenone, 4-tert-butyl-2-methyl-3, 6-dinitro-.

musk ketone. See acetophenone, 4-tert-butyl-2-methyl-3, 6-dinitro-.

musk root. See sumbul.

musk xylene. See benzene, 1-tert-butyl-3, 5-dimethyl-2, 4, 6-trinitro-.

mustard. Yellow product obtained from seeds of black and white mustard, sinapis nigra and s. alba; condiment and medicinal application.

mustard gas. See sulfide, β, β'-dichloroethyl.

mustard oil, ——. See the different esters of isothiocyanic acid.

mustard oil, artificial. See isothiocyanic acid, allyl ester.

mutarotation. Changes of optical rotary power attributed to dynamic isomerism (q.v.).

mutation form. A form which has changed from the normal form.

Muthmann's liquid. See acetylene tetrabromide.

mutual induction. E.m.f. induced in a circuit by current variation in a near-by circuit.

mycellium. Cotton-like structure of threads of a fungus.

Mycoben. A mold and rope inhibitor for inclusion with ingredients used in bread making.

mycology. Biological study of the fungi.

mycosterol. Sterol produced by fungi, molds or yeasts.

mydriatic. Drug that dilates the pupil of eye.

myeline. A crystalline phosphatide found in the brain.

myotic. Drug that contracts the pupil of the eye.

myotrope, negative. Substance causing muscular relaxation.

myotrope, positive. Substance causing muscular contraction.

myotropic. Having a direct action on muscle fiber.

myrcene (2-methyl-6-methylene-2, 7-octadiene). $(CH_3)_2C:CHCH_2CH_2C(:CH_2)CH:CH_2$; m.w. 136.12; liq.; b.p. 167.

myria-. Prefix meaning 10,000 or 10^4.

myricyl alcohol (melissyl alcohol). $C_{31}H_{63}OH$; m.w. 452.50; col. need. f.et.; m.p. 88; i.w.; s.al.

myricyl alcohol, palmitate. See palmitic acid, myricyl ester.

myristaldehyde, oxime (tetradecanal oxime; myristinaldoxime). $C_{13}H_{27}CH:NOH$; m.w. 227.23; need. f.al.; m.p. 82; i.w.; s.al.

myristamide (tetradecanamide; myristic amide). $CH_3(CH_2)_{12}CONH_2$; m.w. 227.23; leaf.; m.p. 103; b.p. 217 [15]; i.w.; s.al.

myristica oil. See oil, nutmeg.

myristic acid (tetradecanoic acid). $CH_3(CH_2)_{12}COOH$; 228.22; col. leaf.; m.p. 58; b.p. 250.5 [100]; i.w.; s.al.

myristic acid, benzyl ester. $C_{13}H_{27}COOCH_2C_6H_5$; m.w. 318.27; liq.; m.p. 20.5; b.p. 229.31 [11]; i.w.; s.al.

myristic acid, ethyl ester (ethyl tetradecanoate). $CH_3(CH_2)_{12}COOC_2H_5$; m.w. 256.25; col. cr.; m.p. 10.5; b.p. 295; i.w.; s.al.

myristic acid, ethylene ester. See glycol, dimyristate.

myristic acid, glyceryl ester. See glycerol, trimyristate.

myristic alcohol. See 1-tetradecanol.

myristic anhydride (tetradecanoic anhydride). $(C_{13}H_{27}CO)_2O$; m.w. 438.42; col. cr.; m.p. 53.4; b.p. 198; i.w.; s.al.

myristicin (5-methoxysafrole). $C_9H_7C_6H_2(O_2CH_2)OCH_3$; m.w. 192.09; pa. yel. oil.; m.p. < -20; b.p. 149.5 [15]; s.al.

myristinaldoxime. See myristaldehyde, oxime.

myristonitrile (tetradecanenitrile). $C_{13}H_{27}CN$; m.w. 209.22; liq. or cr.; m.p. 19; b.p. 226.5 [100]; i.w.; s.al.

myristyl chloride (tetradecanoyl chloride). $CH_3(CH_2)_{12}COCl$; m.w. 246.67; liq.; m.p. −1; b.p. 168 [15].

myrobalan extract. An extract of the dried fruit (nuts) of the Terminala chebula containing tannin and used in preparation of inks.

myrrh gum. See gum, myrrh.

myrtle oil. See oil, myrtle.

myrtle wax. See wax, bay berry.

N

N series. Series of frequencies in an element's x-ray spectrum believed due to transition of electron from different higher quantum states to a state of principal quantum number 4.

Nacconol N. Sodium alkylarylsulfonate; detergent, wetting agent, scouring agent, dyeing assistant.

Nacconol NR. Refined Nacconol N (q.v.).

Naccosol A. Sodium alkylnaphthalenesulfonate; wetting agent.

nacre. See mother of pearl.

Nagaoka formula. Formula, in microhenrys, for inductance in any single layer of a cylindrical coil or solenoid.

nagyagite. $(Pb,Au)_2(Te,Sb,S)_3$(?); s.g. 6.85-7.46; blue-green mineral.

Nalcite A. An organic zeolite-type exchange material for removing alkalinity, hardness, sodium salts and positive metallic ions from solution; regenerated by salt and acid.

Nalcite B. An organic exchange material for removal of negative ions from solutions and for neutralizing acids; regenerated by sodium hydroxide or sodium carbonate.

nantokite. A mineral, CuCl; cub., col. to wh. or grayish; sp.gr. 3.930; hardness 2.0-2.5.

napelline. See benzaconine.

naphtha, coal-tar (naphtha, solvent). The 160° C coal tar fraction, containing benzene, toluene, etc; s.g. 0.862-0.892; dk. straw-water w.; a solvent.

naphtha, high flash (hiflash naphtha). Mineral spirits with a flash point of at least 96° F. and a boiling range of 141.1-188.3° C., a petroleum thinner.

naphtha, hydrogenated. Mixture of hydrocarbons produced by hydrogenation of petroleum, used in manufacture of lacquers and varnishes, and as a thinner in protective coatings.

naphtha, painter's. See painter's naphtha.

naphtha, heavy. A fraction of light oil or of crude benzol distilling substantially beween 160° and 190° C.

naphtha, petroleum. Refined, partly refined or unrefined petroleum product of natural gas, not less than 10% of which distills below 347° F. and not less than 95% below 464° F. when distilled in accordance with A.S.T.M. methods.

naphtha, V.M. & P. See V.M. & P. naphtha.

naphthaeetol. See 1-naphthol, 4-acetamido-.

naphthalane. See naphthalene, decahydro-.

1-naphthaldehyde (1-naphthalenecarbonal; α-naphthoic aldehyde). $C_{10}H_7CHO$; m.w. 156.06; liq.; b.p. 291.6; i.w.; s.al.

2-naphthaldehyde (2-naphthalene-carbonal; β-naphthoic aldehyde). $C_{10}H_7CHO$; m.w. 156.06; col. leaf. f.w.; m.p. 60.5; s.w.; s.al.

1-naphthaldehyde, 2-hydroxy- (2-hydroxy-1-naphthalenecarbonal; β-naphthol-1-aldehyde). $HOC_{10}H_6CHO$; m.w. 172.06; br. need.; m.p. 82; b.p. 192; i.w.; s.al.

2-naphthaldehyde, 1-hydroxy- (1-hydroxy-2-naphthalenecarbonal; α-naphthol-2-aldehyde). $HOC_{10}H_6CHO$; m.w. 172.06; yel. grn. need.; m.p. 59-60; i.w.; s.al.

naphthalene. $C_{10}H_8$; m.w. 128.06; col. monocl.; m.p. 80.22; b.p. 217.9.

naphthalene, crude. The solid product, consisting essentially of naphthalene, obtained on cooling crude intermediate fractions from the distillation of coal tar and during purification of coal gas.

naphthalene, refined. Naphthalene commercially free from other hydrocarbons and from phenols, bases and other impurities.

naphthalene, amyl-. $C_{10}H_7 \cdot C_5H_{11}$; m.w. 198; a viscous oily liquid; sp.gr. 0.96-0.97; b.p. 158 (20 mm.); solidifies −60; used as a plasticizer for rubber, in synthetic resins and asphaltum materials; in inks; as wetting agent. Possesses dielectric characteristics.

naphthalene, amylchloro-. C_5H_{11}-$C_{10}H_6Cl$; m.w. 232.58; sp.gr. 1.076 ^{20}; 208-230 ^{25}; yel.

naphthalene, 1, 1'-azoxydi-. See 1, 1'-azoxy-naphthalene.

naphthalene, 1-benzyl-. See methane, 1-naphthylphenyl-.

naphthalene, 2-benzyl-. See methane, 2-naphthylphenyl-.

naphthalene, 2-benzyloxy-. See ether, benzyl, 2-naphthyl.

naphthalene, 1-bromo-. $C_{10}H_7Br$; m.w. 206.97; col. oil or pr.; m.p. 6.2, 0.2-0.7; b.p. 281.1; s.w.; s.al.

naphthalene, 2-bromo-. $C_{10}H_7Br$; m.w. 206.97; rhomb. leaf. f.al.; m.p. 59; b.p. 281-2; i.w.

naphthalenecarbonal. See naphthaldehyde.

α-naphthalenecarboxylic acid. See 1-naphthoic acid.

β-naphthalenecarboxylic acid. See 2-naphthoic acid.

naphthalene, 1-chloro-. $C_{10}H_7Cl$; m.w. 162.51; col. liq.; b.p. 263; i.w.; s.al.

naphthalene, 2-chloro-. $C_{10}H_7Cl$; m.w. 162.51; col. leaf. f.al.; m.p. 55-6; b.p. 264-6; i.w.; s.al.

naphthalene, 1-chlorodecahydro- (1-chlorodecalin). $C_{10}H_{17}Cl$; m.w. 172.-59; b.p. 114-6 ^{20}.

naphthalene, 1-chloro-4-nitro-. $C_{10}H_6Cl(NO_2)$; m.w. 207.51; brnsh.-yel. need. f.al.; m.p. 85; i.w.; s.al.

naphthalene, 7-chloro-1-nitro-. $C_{10}H_6Cl(NO_2)$; m.w. 207.51; yel. need. f.al.; m.p. 116; i.w.; s.al.

naphthalene, decahydro- (Decalin; bicyclo-[4. 4, 0] decane; naphthalane; naphthane). $C_{10}H_{18}$; m.w. 138.14; col. liq.; cis: m.p. −125; b.p. 193 ^{760}; i.w.; s.al. trans: b.p. 185.3.

naphthalenediamine. See naphthylenediamine.

naphthalene, diamino-. See naphthalenediamine.

naphthalene, diamyl-. $C_{10}H_6(C_5H_{11})_2$; m.w. 268; sp.gr. 0.93-0.94; b.p. 198 ^{20}; solidifies −30; viscous oily liq.; i.w.; used as plasticizer for rubber, in synthetic resins, formulation of inks; constant temperature bath media and in wetting agents.

naphthalene, diazoamino-. See diazoamino-naphthalene.

1, 2-naphthalenedicarboxylic acid. $C_{10}H_6(COOH)_2$; m.w. 216.06; need. f.al.; s.w.; i.al.

1, 8-naphthalenedicarboxylic acid. See naphthalic acid.

1, 4-naphthalenedicarboxylic acid, 1, 2, 3, 4-tetrahydro-1-phenyl-. See α-isatropic acid.

naphthalene, 1, 2-dichloro-. $C_{10}H_6Cl_2$; m.w. 196.96; monocl. plf.al.; m.p. 35-7; b.p. 280-2; s.al.

naphthalene, 1, 3-dichloro-. $C_{10}H_6Cl_2$; m.w. 196.96; need. f.al.; m.p. 61.5; b.p. 289; s.al.

naphthalene, 1, 4-dichloro-. $C_{10}H_6Cl_2$; m.w. 196.96; need. f.al.; m.p. 67-8; b.p. 287.6; i.w.; s.al.

naphthalene, 1, 5-dichloro-. $C_{10}H_6Cl_2$; m.w. 196.96; leaf. f.al. or ac.a.; m.p. 107; i.w.; s.al.

naphthalene, 1, 6-dichloro-. $C_{10}H_6Cl_2$; m.w. 196.96; need. f.al.; m.p. 48.

naphthalene, 1, 7-dichloro-. $C_{10}H_6Cl_2$; m.w. 196.96; need. f.ac.a.; m.p. 63-4; b.p. 286; s.al.

naphthalene, 1, 8-dichloro-. $C_{10}H_6Cl_2$; m.w. 196.96; cr.f.al.; m.p. 88.

naphthalene, 2, 3-dichloro-. $C_{10}H_6Cl_2$; m.w. 196.96; lust. sc. f.al.; m.p. 120; s.al.

naphthalene, 2, 6-dichloro-. $C_{10}H_6Cl_2$; m.w. 196.96; monocl. leaf. f.al.; m.p. 140-1; b.p. 285; s.al.

naphthalene, 2, 7-dichloro-. $C_{10}H_6Cl_2$; m.w. 196.96; pl.f.al.; m.p. 114; s.al.

naphthalene, 1, 4-dihydro-. $C_{10}H_{10}$; m.w. 130.08; col. liq.; m.p. 24.5-25; b.p. 212; i.w.; s.al.

naphthalene, dihydrodiketo-. See naphthoquinone.

naphthalene, dihydroxy-. See naphthalenediol.

naphthalene, 1, 4-dimethyl- (α-dimethylnaphthalene). $C_{10}H_6(CH_3)_2$; m.w. 156.09; liq.; m.p. < −18; b.p. 264.3; i.w.; s.al.

naphthalene, 2, 3-dimethyl-. See guaiene.

naphthalene, 1, 3-dinitro-. $C_{10}H_6(NO_2)_2$; m.w. 218.06; ylsh. need. f.bz.; m.p. 144-5; i.w.; s.al.

naphthalene, 1, 5-dinitro-. $C_{10}H_6(NO_2)_2$; m.w. 218.06; hex. need. f.ac.a.; m.p. 217.5; i.w.; s.al.

naphthalene, 1, 8-dinitro-. $C_{10}H_6(NO_2)_2$; m.w. 218.06; yel. rhomb. pl. f. chl.; m.p. 173-3.5; i.w.

1, 2-naphthalenediol (1, 2-dihydroxynaphthalene; β-hydrononaphthoquinone; β-naphthohydroquinone). $C_{10}H_6(OH)_2$; m.w. 160.06; col. leaf. or need. f. CS_2, leaf. $(+2H_2O)$ f.w.; m.p. anh. 103-4, $+1H_2O$, 58-60; s.w.; s.al.

1, 3-naphthalenediol (1, 3-dihydroxynaphthalene; naphthoresorcinol). $C_{10}H_6(OH)_2$; m.w. 160.06; leaf. f.w.; m.p. 124; s.w.; s.al.

1, 4-naphthalenediol (1, 4-dihydroxynaphthalene; α-hydronaphthoquinone; α-naphthohydroquinone). $C_{10}H_6(OH)_2$; m.w. 160.06; lng. monocl. col. need.; m.p. 176; s.w.; s.al.

1, 5-naphthalenediol (1, 5-dihydroxynaphthalene). $C_{10}H_6(OH)_2$; m.w. 160.06; sm. pr. f.w.; m.p. 265; s.w.; s.al.

1, 6-naphthalenediol (1, 6-dihydroxynaphthalene). $C_{10}H_6(OH)_2$; m.w. 160.06; col. pr. f.bz.; m.p. 138; s.w.; s.al.

1, 7-naphthalenediol (1, 7-dihydroxynaphthalene). $C_{10}H_6(OH)_2$; m.w. 160.06; col. need. fr. bz.; m.p. 178; s.w.; s.al.

1, 8-naphthalenediol (1, 8-dihydroxynaphthalene). $C_{10}H_6(OH)_2$; m.w. 160.06; leaf. or need. f.w.; m.p. 140; s.w.; s.al.

2, 3-naphthalenediol (2, 3-dihydroxynaphthalene). $C_{10}H_6(OH)_2$; m.w. 160.06; monocl. (rhomb.) leaf. f.w.; m.p. 160-1; s.w.; s.al.

2, 6-naphthalenediol (2, 6-dihydroxynaphthalene). $C_{10}H_6(OH)_2$; m.w. 160.06; rhomb. pl. f.w.; m.p. 218; s.w.; s.al.

2, 7-naphthalenediol (2, 7-dihydroxynaphthalene). $C_{10}H_6(OH)_2$; m.w. 160.06; need. f.w.; m.p. 190; s.w.; s.al.

1, 5-naphthalenedisulfonic acid. $C_{10}H_6(SO_3H)_2$; m.w. 288.18; leaf.; s.w.; s.al.

1, 6-naphthalenedisulfonic acid. $C_{10}H_6(SO_3H)_2$; m.w. 288.18; cr.; s.w.; s.al.

2, 7-naphthalenedisulfonic acid (α-naphthalenedisulfonic acid). $C_{10}H_6(SO_3H)_2$; m.w. 288.18; hyg. need.; s.w.

1, 3-naphthalenedisulfonic acid, 7-amino-. See 2-naphthylamine-6, 8-disulfonic acid.

1, 5-naphthalenedisulfonic acid, 3-amino-. See 2-naphthylamine-4, 8-disulfonic acid.

1, 5-naphthalenedisulfonic acid, 4-amino-. See 1-naphthylamine-4, 8-disulfonic acid.

2, 7-naphthalenedisulfonic acid, 4, 5-dihydroxy-. See chromotropic acid.

naphthalene, ethoxy-. See ether, ethyl naphthyl.

naphthalene, 1-ethyl- (α-naphthylethane; α-ethylnaphthalene). $C_{10}H_7C_2H_5$; m.w. 156.09; col. liq.; m.p. < −14; i.w.; s.al.

naphthalene, 2-ethyl- (β-naphthylethane; β-ethylnaphthalene). $C_{10}H_7C_2H_5$; m.w. 156.09; col. liq.; m.p. −19; b.p. 251: i.w.; s.al.

naphthaleneethylene. See acenaphthene.

naphtha, solvent. A coal tar distillation product consisting essentially of the xylenes and possibly their higher homologs.

naphthalene, hexachlor-. A chlorinated naphthalene; tough amorp. pale yel. solid; sp.gr. 1.75-1.81; b.p. 680-730; used as water-, acid-, fire-, mildew-, and insect-proofing agent.

naphthalene, hexahydride. See naphthalene, hexahydro-.

naphthalene, hexahydro- (naphthalene hexahydride). $C_{10}H_{14}$; m.w. 134.11; col. liq.; b.p. 205.5.

naphthalene, hydrazodi-. See hydrazine, dinaphthyl-.

naphthalene, hydroxy. See naphthol.

naphthalene, 1-iodo-. $C_{10}H_7I$; m.w. 253.97; oil; b.p. 305; i.w.; s.al.

naphthalene, 2-iodo-. $C_{10}H_7I$; m.w. 253.97; cr. leaf.; m.p. 54.5; b.p. 308-10; i.w.; s.al.

naphthalene, methoxy-. See ether, methyl naphthyl.

naphthalene, 1-methyl- (α-methylnaphthalene). $C_{10}H_7CH_3$; m.w. 142.08; col. liq.; m.p. −22; b.p. 240-3; i.w.; s.al.

naphthalene, 2-methyl- (β-methylnaphthalene). $C_{10}H_7CH_3$; m.w. 142.08; col. monocl. f.al.; m.p. 35.1; b.p. 245; i.w.; s.al.

naphthalene, 1-(γ-methylbutoxy)-. See ether, isoamyl-1-naphthyl.

naphthalene, 2-(γ-methylbutoxy)-. See ether, isoamyl 2-naphthyl.

naphthalene, naphthoxy-. See naphthyl ether.

naphthalene, 1-(2-naphthoyl)-. See 1, 2'-naphthyl ketone.

naphthalene, 1-nitro- (α-nitronaphthalene). $C_{10}H_7NO_2$; m.w. 173.06; yel. need. f.al.; m.p. 58.8; b.p. 304; i.w.; s.al.

naphthalene, 2-nitro- (β-nitronaphthalene). $C_{10}H_7NO_2$; m.w. 173.06; col. rhomb. need. f.al.; m.p. 79; b.p. 165 [15]; i.w.; s.al.

naphthalene, 1-phenyl-. $C_6H_5C_{10}H_7$; m.w. 204.09; col. liq. or waxy solid; m.p. *ca.* 45; b.p. 325; i.w.; s.al.

naphthalene, 2-phenyl-. $C_6H_5C_{10}H_7$; m.w. 204.09; col. leaf. f.al.; m.p. 102.5; b.p. 345; s.al.

naphthalene, 2-(2-propenoxy)-. See ether, allyl 2-naphthyl.

naphthalene, propoxy-. See ether, naphthyl propyl.

1-naphthalenesulfonic acid (α-naphthalenesulfonic acid). $C_{10}H_7SO_3H \cdot H_2O$; m.w. 226.14; cr.; m.p. 90; s.w.; s.al.

2-naphthalenesulfonic acid (β-naphthalenesulfonic acid). $C_{10}H_7SO_3H$; m.w. 208.12; col.-wh. deliq. pl.; m.p. 102; s.w.; s.al.

naphthalenesulfonic acid, amino-. See naphthylaminesulfonic acid.

1-naphthalenesulfonic acid, 4-amino-. See naphthionic acid.

1-naphthalenesulfonyl chloride. $C_{10}H_7SO_2Cl$; m.w. 226.57; leaf. f.et.; m.p. 68; b.p. 195 [13]; i.w.; s.al.

2-naphthalenesulfonyl chloride. $C_{10}H_7SO_2Cl$; m.w. 226.57; wh. cr. powd. or leaf.; m.p. 76; b.p. 201 [13]; i.w.; s.al.

naphthalene, tetrachloride. See naphthalene, 1, 2, 3, 4-tetrachloro-1, 2, 3, 4-tetrahydro-.

naphthalene, 1, 2, 3, 4-tetrachloro-1, 2, 3, 4-tetrahydro- (naphthalene tetrachloride). $C_{10}H_8Cl_4$; m.w. 269.89; cr. f.et.; m.p. 182-3; i.w.; s.al.

naphthalene, 1, 2, 3, 4-tetrahydro- (Tetralin; naphthalene, 1, 2, 3, 4-tetrahydride). $C_{10}H_{12}$; m.w. 132.09; col. liq.; m.p. −30; b.p. 207.2; i.w.; s.al.

naphthalene, 1, 3, 5, 8-tetranitro- (γ-tetranitronaphthalene). $C_{10}H_4(NO_2)_4$; m.w. 308.06; yel. tetr. f. acet.; m.p. 195; s.al.

naphthalene, 1, 3, 6, 8-tetranitro- (β-tetranitronaphthalene). $C_{10}H_4(NO_2)_4$; m.w. 308.06; long need. f.al.; m.p. 203; i.w.; s.al.

naphthalene, 1, 5, ?, ?-tetranitro- (α-tetranitronaphthalene). $C_{10}H_4(NO_2)_4$; m.w. 308.06; lt. yel. need. f. chl.; m.p. 259; s.w.; s.al.

naphthalenethiol. See naphthol, thio-.

naphthalene, trichlor-. White to pale yellow crystalline solid; sp.gr. 1.53-1.59; sol. hydrocarbon solvents; used in degreasing metals for electroplating.

naphthalene, 1, 2, 5-trinitro-. $C_{10}H_5(NO_2)_3$; m.w. 263.06; col. need. f.al.; m.p. 113; s.al.

naphthalene, 1, 3, 5-trinitro-. $C_{10}H_5(NO_2)_3$; m.w. 263.06; yel. rhomb. (monocl.) f. chl.; m.p. 123; i.w.; s.al.

naphthalene, 1, 3, 8-trinitro-. $C_{10}H_5(NO_2)_3$; m.w. 263.06; monocl. f. chl.; m.p. 218; i.w.

naphthalene, 1, 4, 5-trinitro-. $C_{10}H_5(NO_2)_3$; m.w. 263.06; yel. leaf.; m.p. 247; i.w.

naphthalic acid (1, 8-naphthalenedicarboxylic acid). $C_{10}H_6(COOH)_2$; m.w. 216.06; col. need. f.al.; s.w.; s.al.

1-naphthamide (1-naphthalenecarbonamide; α-naphthoamide). $C_{10}H_7CONH_2$; m.w. 171.08; col. need. f.al.; m.p. 202; s.w.; s.al.

2-naphthamide (2-naphthalenecarbonamide; β-naphthoamide). $C_{10}H_7CONH_2$; m.w. 171.08; col. tab. f.al.; m.p. 192; s.w.; s.al.

naphthane. See naphthalene, decahydro-.

naphthazarin (5, 8-dihydroxy-1, 4-naphthoquinone). $C_{10}H_4O_2(OH)_2$; m.w. 190.05; red. br. need. f.al.; m.p. 276-80; s.w.; s.al.

naphthenes. Saturated compounds of general formula C_nH_{2n} having closed rings of methylene groups, e.g. cyclohexane, C_6H_{12}.

naphthenic. See cyclohexane carboxylic acid.

naphthionic acid (1-naphthylamine-4-sulfonic acid; 4-amino-1-naphthalenesulfonic acid). $NH_2C_{10}H_6SO_3H \cdot \frac{1}{2}H_2O$; m.w. 232.15; col. need. f.w.; s.al.

α-naphthoamide. See 1-naphthamide.

β-naphthoamide. See 2-naphthamide.

α-naphthohydroquinone. See 1, 4-naphthalenediol.

β-naphthohydroquinone. See 1, 2-naphthalenediol.

1, 2-naphthohydroquinone. See 1, 2-naphthalenediol.

1, 4-naphthohydroquinone. See 1, 4-naphthalenediol.

1-naphthoic acid (α-naphthalenecarboxylic acid; α-naphthoic acid). $C_{10}H_7COOH$; m.w. 172.06; col. need. f.dil.al.; m.p. 160; b.p. 300; s.w.; s.al.

2-naphthoic acid (β-naphthalenecarboxylic acid; β-naphthoic acid). $C_{10}H_7COOH$; m.w. 172.06; col. monocl. need. f. lgr.; m.p. 185; b.p. >300; s.al.

1-naphthoic acid, 2-hydroxy-. $HOC_{10}H_6COOH$; m.w. 188.06; need. f.al. and et.; s.w.; s.al.

1-naphthoic acid, 5-hydroxy-. $HOC_{10}H_6COOH$; m.w. 188.06; lng. need. f.w.; m.p. 234-7; s.w.; s.al.

1-naphthoic acid, 6-hydroxy-. $HOC_{10}H_6COOH$; m.w. 188.06; sm. need. f.w.; m.p. 187; s.w.; s.al.

1-naphthoic acid, 7-hydroxy-. $HOC_{10}H_6COOH$; m.w. 188.06; need. f.w.; s.w.; s.al.

1-naphthoic acid, 8-hydroxy-. $HOC_{10}H_6COOH$; m.w. 188.06; need. f.et.; m.p. 169; s.w.; s.al.

2-naphthoic acid, 1-hydroxy-. $HOC_{10}H_6COOH$; m.w. 188.06; need. f.al. or et.; m.p. 186-8; s.w.; s.al.

2-naphthoic acid, 3-hydroxy-. $HOC_{10}H_6COOH$; m.w. 188.06; yel. rhomb. need. f.w.; m.p. 216; s.w.; s.al.

2-naphthoic acid, 5-hydroxy-. $HOC_{10}H_6COOH$; m.w. 188.06; need. f.w. or al.; m.p. 211-2; s.w.; s.al.

2-naphthoic acid, 7-hydroxy-. $HOC_{10}H_6COOH$; m.w. 188.06; leaf.; m.p. 262; s.w.; s.al.

1-naphthoic acid, 8-nitro-. $NO_2C_{10}H_6COOH$; m.w. 217.06; pr.f.al.; m.p. 215.

α-naphthoic aldehyde. See 1-naphthaldehyde.

β-naphthoic aldehyde. See 2-naphthaldehyde.

1-naphthol (α-naphthol; 1-hydroxynaphthalene). $C_{10}H_7OH$; m.w. 144.06; yel. monocl.; m.p. 96; b.p. 288; s.w.; s.al.

2-naphthol (β-naphthol; 2-hydroxynaphthalene). $C_{10}H_7OH$; m.w. 144.06; col. monocl. leaf.; m.p. 122; b.p. 294.85; s.al.

2-naphthol, 1-acetamido- (N-[2-hydroxy-1-naphthyl] acetamide). $CH_3CONHC_{10}H_6OH$; m.w. 201.09; leaf. f.w.; al.; s.al.

1-naphthol, 4-acetamido- (N-[4-hydroxy-1-naphthyl] acetamide; naphthacetol). $CH_3CONHC_{10}H_6OH$; m.w. 201.09; need. f.al.; m.p. 187; s.w.; s.al.

1-naphthol, acetate (α-naphthyl acetate). $CH_3COOC_{10}H_7$; m.w. 186.08; need. or pl f.al.; m.p. 44.8; s.w.; s.al.

2-naphthol, acetate (β-naphthyl acetate). $CH_3COOC_{10}H_7$; m.w. 186.08; sm. need. f.al.; m.p. 68.5; i.w.; s.al.

1-naphthol, 2-aceto-. See 2-acetonaphthone, 1-hydroxy-.

1-naphthol, 2-acetyl-. See 2-acetonaphthone, 1-hydroxy- and corresponding derivatives.

1-naphthol, 2-acetyl-4-bromo-. See 2-acetonaphthone, 4-bromo-1-hydroxy-.

naphtholaldehyde. See naphthaldehyde, hydroxy-.

1-naphthol, 2-amino- (1-hydroxy-2-naphthylamine). $NH_2C_{10}H_6OH$; m.w. 159.08; need.; s.w.

1-naphthol, 4-amino- (4-hydroxy-1-naphthylamine). $NH_2C_{10}H_6OH$; m.w. 159.08; need.; s.w.; s.al.

1-naphthol, 5-amino- (5-hydroxy-1-naphthylamine). $NH_2C_{10}H_6OH$; m.w. 159.08; cr.; s.w.; s.al.

1-naphthol, 7-amino- (8-hydroxy-2-naphthylamine). $NH_2C_{10}H_6OH$; m.w. 159.08; cr. (sc.) f.chl.; m.p. 158; s.w.; s.al.

1-naphthol, 8-amino- (8-hydroxy-1-naphthylamine). $NH_2C_{10}H_6OH$; m.w. 159.08; wh. need.; s.w.

2-naphthol, 1-amino- (2-hydroxy-1-naphthylamine). $NH_2C_{10}H_6OH$; m.w. 159.08; leaf. unstag.; s.w.

2-naphthol, 3-amino- (3-hydroxy-2-naphthylamine). $NH_2C_{10}H_6OH$; m.w. 159.08; need. f.w.; m.p. 234; s.w.; s.al.

2-naphthyl, 5-amino- (6-hydroxy-1-naphthylamine). $NH_2C_{10}H_6OH$; m.w. 159.08; need. or sc.f.w.; m.p. 186; s.w.; s.al.

2-naphthol, 6-amino- (6-hydroxy-2-naphthylamine). $NH_2C_{10}H_6OH$; m.w. 159.08; sc.f.h.w.; s.w.; s.al.

2-naphthol, 7-amino- (7-hydroxy-2-naphthylamine). $NH_2C_{10}H_6OH$; m.w. 159.08; need. f.al.; m.p. 201; s.w.; s.al.

2-naphthol, 8-amino- (7-hydroxy-1-naphthylamine). $NH_2C_{10}H_6OH$; m.w. 159.08; need. f.w. or et.; m.p. 205-7; s.w.; s.al.

β-naphthol, tert-amyl-. $C_5H_{11}C_{10}H_6OH$; m.w. 214.14; col. to brown (unstable); b.p. 210-218 [15].

2-naphthol, benzoate (β-naphthyl benzoate). $C_{10}H_7OOCC_6H_5$; m.w. 248.09; need. f.al.; m.p. 110; i.w.; s.al.

2-naphthol, 1-bromo-. $BrC_{10}H_6OH$; m.w. 222.97; rhomb. pr.; m.p. 84; i.w.; s.al.

2-naphthol, 6-bromo-1-methyl-. $CH_3C_{10}H_5BrOH$; m.w. 236.99; need.; m.p. 129; i.w.; s.al.

1-naphthol, 4-bromo-2-propionyl-. See 2-propionaphthone, 4-bromo-1-hydroxy-.

1-naphthol, 2-butyryl-. See 2-butyronaphthone, 1-hydroxy-.

2-naphthol, 1-chloro-. $ClC_{10}H_6OH$; m.w. 178.51; pl.f.w., or need. f. lgr.; m.p. 70; s.w.; s.al.

1-naphthol, 2-cinnamyl-. See 2-acrylonaphthone, 1-hydroxy-β-phenyl-.

1-naphthol, 1, 6-dibromo-. $Br_2C_{10}H_5OH$; m.w. 301.88; need. f.ac.a.; m.p. 106; i.w.; s.al.

1-naphthol, 2, 4-dibromo-. $Br_2C_{10}H_5OH$; m.w. 301.88; wh. need. f.al.; m.p. 105; i.w.; s.al.

1-naphthol, 2, 4-dichloro-. $Cl_2C_{10}H_5OH$; m.w. 212.96; wh. need. f.al. or bz.; m.p. 107; i.w.; s.al.

1-naphthol, 2, 4-dinitro-. $(NO_2)_2C_{10}H_5OH$; m.w. 234.06; yel. need. f.h.al. or chl.; m.p. 138; s.w.; s.al.

2-naphthol, 1, 6-dinitro-. $(NO_2)_2C_{10}H_5OH$; m.w. 234.06; pa. yel. need.; s.w.; s.al.

2-naphthol-3, 6-disulfonic acid (β-naphtholdisulfonic acid R; β-naphthol-α-disulfonic acid; R-acid). $HOC_{10}H_5(SO_3H)_2$; m.w. 304.18; deliq. col. need.; s.w.; s.al.

2-naphthol-6, 8-disulfonic acid (β-naphthol-γ-disulfonic acid; G-acid). $HOC_{10}H_5(SO_3H)_2$; m.w. 304.18; s.w.

β-naphtholdisulfonic acid R. See 2-naphthol-3, 6-disulfonic acid.

1-naphthol-3, 6-disulfonic acid, 8-amino- (H acid). $H_2N(OH)C_{10}H_4(SO_3H)_2$; m.w. 319.20; col. cr.; s.w.

8-naphthol, 2, 4-disulfonic acid, 1-amino-. See Chicago acid.

2-naphthol, 3, 6-disulfonic acid, sodium salt. $Na_2(SO_3)_2C_{10}H_5OH$; used in manufacture of intermediates and dyestuffs.

2-naphthol, 1-methyl-. $CH_3C_{10}H_6OH$; m.w. 158.08; need.; m.p. 112; s.w.; s.al.

β-naphthol-α-monosulfonic acid. See croceic acid.

1-naphthol, 2-nitro-. $NO_2C_{10}H_6OH$; m.w. 189.06; yel. need. or leaf. f.al.; m.p. 128; s.w.; s.al.

1-naphthol, 4-nitro-. $NO_2C_{10}H_6OH$; m.w. 189.06; yel. need. f.w.; m.p. 164; s.w.; s.al.

2-naphthol, 1-nitro-. $NO_2C_{10}H_6OH$; m.w. 189.06; yel. need. f.al.; m.p. 103; s.w.; s.al.

2-naphthol, 5-nitro-. $NO_2C_{10}H_6OH$; m.w. 189.06; yel. need. f.w.; m.p. 147; s.w.; s.al.

2-naphthol, 8-nitro-. $NO_2C_{10}H_6OH$; m.w. 189.06; yel. need. f.w.; m.p. 145; s.w.; s.al.

1-naphthol, 2-nitroso- (1, 2-naphthoquinone 2-oxime). $NOC_{10}H_6OH$, or $C_{10}H_6O(:NOH)$; m.w. 173.06; yel. need. f.bz.; m.p. 152; s.w.; s.al.

1-naphthol, 4-nitroso- (1, 4-naphthoquinone-1-oxime). $NOC_{10}H_6OH$, or $C_{10}H_6O(:NOH)$; m.w. 173.06; yel. need.; i.w.; s.al.

2-naphthol, 1-nitroso- (1, 2-naphthoquinone-1-oxime). $NOC_{10}H_6OH$, or $C_{10}H_6O(:NOH)$; m.w. 173.06; yel. need. f.bz.; m.p. 110; s.al.

2-naphthol, 1-p-phenylazo- (p-nitrobenzeneazo-β-naphthol; paranitraniline red). $NO_2C_6H_4N:NC_{10}H_6OH$; m.w. 293.11; or. to. br. pl.; m.p. 252; i.w.; i.al.; a dyestuff.

1-naphthol-2-sulfonic acid (α-naphtholsulfonic acid of Schaeffer). $HOC_{10}H_6SO_3H$; m.w. 224.12; col. rhomb. tab. f.w.; m.p. >250; s.w.; s.al.

1-naphthol-3-sulfonic acid. $HOC_{10}H_6SO_3H$; m.w. 224.12; need.; s.w.

1-naphthol-4-sulfonic acid (Nevile-Winther acid). $HOC_{10}H_6SO_3H$; m.w. 224.12; col. pl.f.w.; m.p. 170; s.w.; s.al.; used in manufacture of azo dyes.

1-naphthol-5-sulfonic acid (α-naphtholsulfonic acid L). $HOC_{10}H_6SO_3H$; m.w. 224.12; wh. hyg. cr.; m.p. 120; s.w.

1-naphthol-7-sulfonic acid. $HOC_{10}H_6SO_3H$; m.w. 224.12; cr.; s.w.; s.al.

1-naphthol-8-sulfonic acid (α-naphtholsulfonic acid S). $HOC_{10}H_6SO_3H$; m.w. 224.12; cr.; m.p. 107; b.p. $-H_2O$, 180; s.w.

2-naphthol-6-sulfonic acid (Schäffer's acid; β-naphtholsulfonic acid S). $C_{10}H_6(OH)SO_3H$; m.w. 224.12; col. leaf.; m.p. 125; s.w.; s.al.

2-naphthol-7-sulfonic acid (β-naphtholsulfonic acid F). $C_{10}H_6(OH)SO_3H$; m.w. 224.12; need. f. HCl; m.p. 89; s.w.; s.al.

2-naphthol-8-sulfonic acid. See croceic acid.

1-naphthol-5-sulfonic acid, 8-amino- (S acid). $C_{10}H_9NO_4S$; m.w. 239.14; wh. need.; s.w.; i.al.

2-naphthol-4-sulfonic acid, 1-amino- (acid 1:2:4). $C_{10}H_9NO_4S$; m.w. 239.77; pink-wh. need.; s.h.w.

5-naphthol-7-sulfonic acid, 1-amino- (M acid). $C_{10}H_9O_4NS$; m.w. 239.77; dye intermediate.

5-naphthol-7-sulfonic acid, 2-amino-. See J acid.

1-naphthol-8-sulfonic acid, inner anhydride (naphthosulfone). $C_{10}H_6<\begin{matrix}-\\|\\OSO_2\end{matrix}>$; m.w. 206.11; pr.f.bz.; m.p. 154; b.p. 360; s.w.; s.al.

2-naphthol-6-sulfonic acid, 1-amino-, sodium salt (elkonogen). $H_2N(OH)C_{10}H_5SO_3Na$; m.w. 261.13; wh. powd.; s.w.

1-naphthol, 1, 2, 3, 4-tetrahydro- (α-naphthol 1, 2, 3, 4-tetrahydride; ac-tetrahydro-α-naphthol). $C_6H_4:C_4H_7OH$; m.w. 148.09; col. liq.; b.p. 140 [15]; s.w.; s.al.

1-naphthol, 5, 6, 7, 8-tetrahydro- (α-naphthol 5, 6, 7, 8-tetrahydride; ar-tetrahydro-α-naphthol). $C_4H_8:C_6H_3OH$; m.w. 148.09; wh. monocl. pl.; m.p. 68; b.p. 265.3; s.w.; s.al.

2-naphthol, 1, 2, 3, 4-tetrahydro- (β-naphthol 1, 2, 3, 4-tetrahydride; ac-tetrahydro-β-naphthol). $C_6H_4:C_4H_7OH$; m.w. 148.09; oil.; b.p. 265.5; s.w.; s.al.

2-naphthol, 5, 6, 7, 8-tetrahydro- (β-naphthol 5, 6, 7, 8-tetrahydride; ar-tetrahydro-α-naphthol). $C_6H_8:C_6H_3OH$; m.w. 148.09; need. f.al.; m.p.

57.5; b.p. 276; s.w.; s.al.

1-naphthol, thio- (1-naphthalenethiol; α-naphthyl mercaptan). $C_{10}H_7SH$; m.w. 160.12; liq.; b.p. 161 [20]; i.w.; s.al.

2-naphthol, thio- (2-naphthalenethiol; β-naphthyl mercaptan-). $C_{10}H_7SH$; m.w. 160.12; glit. sc.f.al.; m.p. 81; s.w.; s.al.

1-naphthonitrile (1-naphthalenecarbonitrile; α-naphthyl cyanide). $C_{10}H_7CN$; m.w. 153.06; col. need. f. lgr.; m.p. 33.5; b.p. 296.5; i.w.; s.al.

2-naphthonitrile (2-naphthalenecarbonitrile; β-naphthyl cyanide). $C_{10}H_7CN$; m.w. 153.06; col. leaf. f. lgr.; m.p. 66.5; b.p. 305; i.w.; s.al.

α β-naphthophenazine. See benzo-[a] phenazine.

α-naphthoquinaldine. See benzo-[h] quinoline, 2-methyl-.

β-naphthoquinaldine. See benzo-[f] quinoline, 3-methyl-.

naphtho [2, 3-f] quinoline (α-anthraquinoline). $C_{17}H_{11}N$; m.w. 229.09; col. leaf. or tab.; m.p. 170; b.p. 446; i.w.; s.al.

α-naphthoquinoline. See benzo[h]-quinoline.

β-naphthoquinoline. See benzo[f] quinoline.

1, 2-naphthoquinone (1, 2-dihydro-1, 2-diketonaphthalene; β-naphthoquinone). $C_{10}H_6O_2$; m.w. 158.05; yel.-red need. f.et.; s.w.; s.al.

1, 4-naphthoquinone (1, 4-dihydro-1, 4-diketonaphthalene; α-naphthoquinone). $C_{10}H_6O_2$; m.w. 158.05; yel. tricl. f. lgr.; m.p. 125; s.w.; s.al.

1, 4-naphthoquinone, 2, 3, (or 3, 4)-dihydroxy-. See isonaphthazarin.

2, 6-naphthoquinone (2, 6-dihydro-2, 6-diketonaphthalene; amphi-naphthoquinone). $C_{10}H_6O_2$; m.w. 158.05; or. pr.; m.p. 135; s.al.

1, 4-naphthoquinone, 5, 8-dihydroxy-. See naphthazarin.

1, 2-naphthoquinone, 6-hydroxy-. $HOC_{10}H_5O_2$; m.w. 174.05; brick red lvs. f. acet.; s.w.; s.al.

1, 2-naphthoquinone, 7-hydroxy-. $HOC_{10}H_5O_2$; m.w. 174.05; br.-red need.; m.p. 194; s.al.

1, 4-naphthoquinone, 2-hydroxy-. $HOC_{10}H_5O_2$; m.w. 174.05; yel. need.; s.w.; s.al.

1, 4-naphthoquinone, 5-hydroxy-. See juglone.

1, 2-naphthoquinone, 1-oxime. See 2-naphthol, 1-nitroso-.

1, 2-naphthoquinone, 2-oxime. See 1-naphthol, 2-nitroso-.

1, 4-naphthoquinone, 1-oxime. See 1-naphthol, 4-nitroso-.

naphthoresorcinol. See 1, 3-naphthalenediol.

naphthosulfone. See 1-naphthol-8-sulfonic acid, inner anhydride.

1-naphthylamine (α-naphthylamine). $C_{10}H_7NH_2$; m.w. 143.08; col. rhomb. need. f.dil.al.; m.p. 50; b.p. 301; s.al.

2-naphthylamine (β-naphthylamine). $C_{10}H_7NH_2$; m.w. 143.08; leaf. f.w.; m.p. 110.2; b.p. 306.1; s.w.; s.al.

1-naphthylamine, N-acetyl- (N-1-naphthylacetamide; 1-acetonaphthalide). $C_{10}H_7NHCOCH_3$; m.w. 185.09; col. cr.; m.p. 159; s.w.

2-naphthylamine, N-acetyl- (N-2-naphthylacetamide; 2-acetonaphthalide). $C_{10}H_7NHCOCH_3$; m.w. 185.09; lng. flat. need. f.w.; m.p. 132; s.w.; s.al.

1-naphthylamine, N-acetyl-N-methyl- (n-methyl-n-1-naphthylacetamide). $(CH_3CO)(CH_3)NC_{10}H_7$; m.w. 199.11; pr.; m.p. 95; s.w.; s.al.

α-naphthylamine, N-N-butyl-. $C_{10}H_7NHC_4H_9$; m.w. 199.14; deep red; sp.gr. 1.012 [20]; b.p. 318-325.

1-naphthylamine, N, N-diethyl-. $C_{10}H_7N(C_2H_5)_2$; m.w. 199.14; col. liq.; b.p. 290; i.w.; s.al.

2-naphthylamine, N, N-dimethyl-. $C_{10}H_7N(CH_3)_2$; m.w. 171.11; col.; b.p. 305; i.w.; s.al.

1-naphthylamine-4, 8-disulfonic acid (4-amino-1, 5-naphthalenedisulfonic acid; α-naphthylaminedisulfonic acid S). $NH_2C_{10}H_5(SO_3H)_2$; m.w. 303.20; rhomb. cr.; s.w.

2-naphthylamine-4, 8-disulfonic acid (3-amino-1, 5-naphthalenedisulfonic acid; β-naphthylaminedisulfonic acid; C-acid; acid IV). $H_2NC_{10}H_5(SO_3H)_2$; m.w. 303.20; s.w.

2-naphthylamine-6, 8-disulfonic acid (amino G acid; 7-amino-1, 3-naphthalenedisulfonic acid). $H_2NC_{10}H_5(SO_3H)_2$; m.w. 303.20; monocl. need.; s.w.

1-naphthylamine, N-ethyl-. $C_{10}H_7NHC_2H_5$; m.w. 171,11; col. oil; b.p. 305; i.w.; s.al.

2-naphthylamine, N-ethyl-. $C_{10}H_7NHC_2H_5$; m.w. 171.11; col. oil.; m.p. < -15; b.p. 315-6; i.w.; s.al.

1-naphthylamine, hydrochloride. $C_{10}H_7NH_2 \cdot HCl$; m.w. 179.54; sm. need.; s.al.

2-naphthylamine, hydrochloride. $C_{10}H_7NH_2 \cdot HCl$; m.w. 179.54; leaf.; s.w.; s.al.

naphthylamine, hydroxy-. See naphthol, amino-.

1-naphthylamine, N-methyl- (α-naphthylmethylamine). $C_{10}H_7NHCH_3$; m.w. 157.09; red oil.; b.p. 293; i.w.; s.al.

2-naphthylamine, N-methyl- (β-naphthylmethylamine). $C_{10}H_7NHCH_3$; m.w. 157.09; oil; b.p. 308-10 [761].

α-naphthylaminemonosulfonic acid S. See 1-naphthylamine, 8-sulfonic acid.

β-naphthylaminemonosulfonic acid I (or Dahl). See 2-naphthylamine, 8-sulfonic acid.

1-naphylamine, 4-(1-naphthylazo)- (4-amino-1, 1′-azonaphthalene). $C_{10}H_7N:NC_{10}H_6NH_2$; m.w. 297.14; redsh.-br. need.; m.p. 175; i.w.; s.al.

1-naphthylamine, 6-nitro-. $NO_2C_{10}H_5NH_2$; m.w. 188.08; yel. pr.f.al.; m.p. 143; s.al.

2-naphthylamine, 1-nitro-. $NO_2C_{10}H_5NH_2$; m.w. 188.08; or. yel. need. f.a.l; m.p. 127; s.w.; s.al.

2-naphthylamine, 5-nitro-. $NO_2C_{10}H_5NH_2$; m.w. 188.08; red need. f.al.; m.p. 143; s.al.

2-naphthylamine, 8-nitro-. $NO_2C_{10}H_5NH_2$; m.w. 188.08; red need.; m.p. 105; s.al.

2-naphthylamine, 1-nitroso-. $NOC_{10}H_5NH_2$; m.w. 172.08; grn. need. f.al.; m.p. 150-2; s.w.; s.al.

1-naphthylamine, N-phenyl-. $C_{10}H_7NHC_6H_5$; m.w. 219.11; col. leaf. or pr. f.al.; m.p. 62; b.p. 335 [248]; s.al.

2-naphthylamide, N-phenyl-. $C_{10}H_7NHC_6H_5$; m.w. 219.11; rhomb. need. f.me.al.; m.p. 108; b.p. 399.5; i.w.; s.al.

1-naphthylamine, 4-phenyl-(4)-azo- (4-benzeneazo-α-naphthylamine). $C_6H_5N_2C_{10}H_6NH_2$; m.w. 247.13; red. need. f.al.; m.p. 120; s.al.

1-naphthylamine, N-propyl-. $C_{10}H_7NHCH_2CH_2CH_3$; m.w. 185.13; oil; b.p. *ca.* 317; i.w.

α-naphthylaminesulfonic acid. See 1-naphthylamine-5-sulfonic.

β-naphthylaminesulfonic acid F. See 2-naphthylamine-7-sulfonic acid.

β-naphthylaminesulfonic acid III. See 2-naphthylamine-5-sulfonic acid.

1-naphthylamine-2-sulfonic acid (1-amino-2-naphthalenesulfonic acid). $NH_2C_{10}H_6SO_3H$; m.w. 223.14; need. f.w.; i.al.

1-naphthylamine-4-sulfonic acid. See naphthionic acid.

1-naphthylamine-5-sulfonic acid (5-amino-1-naphthalenesulfonic acid; α-naphthylaminesulfonic acid; Laurent's acid). $NH_2C_{10}H_6SO_3H \cdot H_2O$; m.w. 241.15; sm. pl.; m.p. 189.5; s.w.; s.al.

1-naphthylamine-6-sulfonic acid (5-amino-2-naphthalenesulfonic acid). $NH_2C_{10}H_6SO_3H$; m.w. 223.14; col. pl.f.w.; i.al.

1-naphthylamine-7-sulfonic acid (8-amino-2-naphthalenesulfonic acid). $NH_2C_{10}H_6SO_3H \cdot H_2O$; m.w. 241.15; col. need. f.w.; s.al.

1-naphthylamine-8-sulfonic acid (8-amino-1-naphthalenesulfonic acid; α-naphthylaminemonosulfonic acid S; Schöllkopf's acid). $NH_2C_{10}H_6SO_3H \cdot H_2O$; m.w. 241.15; need.; m.p. $-H_2O$; 130; s.al.

2-naphthylamine-1-sulfonic acid (Tobias' acid; 2-amino-1-naphthalenesulfonic acid). $NH_2C_{10}H_6SO_3H$; m.w. 223.14; leaf. f.h.w.; s.w.; s.al.

2-naphthylamine-4-sulfonic acid (3-amino-1-naphthalenesulfonic acid). $NH_2C_{10}H_6SO_3H \cdot H_2O$; m.w. 241.15; need. f.w.; s.w.; s.al.

2-naphthylamine-5-sulfonic acid (6-amino-1-naphthalenesulfonic acid; β-naphthylaminesulfonic acid III). $NH_2C_{10}H_6SO_3H$; m.w. 223.14; need. f.w.; s.al.

2-naphthylamine-6-sulfonic acid (6-amino-2-naphthalenesulfonic acid; Brönner's acid). $NH_2C_{10}H_6SO_3H \cdot H_2O$; m.w. 241.15; leaf.; s.al.

2-naphthylamine-7-sulfonic acid (7-amino-2-naphthalenesulfonic acid; β-naphthylaminesulfonic acid F). $NH_2C_{10}H_6SO_3H \cdot H_2O$; m.w. 241.15; col. need.; s.al.

2-naphthylamine-8-sulfonic acid (7-amino-1-naphthalenesulfonic acid; β-naphthylaminemonosulfonic acid I [of Dahl]). $NH_2C_{10}H_6SO_3H$; m.w. 223.14; pr. f.w.; s.al.

1-naphthylamine, 5, 6, 7, 8-tetrahydro- (α-naphthylamine 5, 6, 7, 8-tetrahydride; ar-tetrahydro-α-naphthylamine). $C_4H_5:C_6H_3NH_2$; m.w. 147.11; oil.; b.p. 276.8; s.w.; s.al.

2-naphthylamine, 1, 2, 3, 4-tetrahydro- (β-naphthylamine 1, 2, 3, 4-tetrahydride; ac-tetrahydro-β-naphthylamine). $C_6H_4:C_4H_7NH_2$; m.w. 147.11; . liq.; m.p. 38; b.p. 278.5; s.w.; s.al.

1-naphthylamine, N-o-tolyl- (N-1-naphthyl-o-toluidine). $C_{10}H_7NHC_6H_4CH_3$; m.w. 233.13; need. f.lgr.; m.p. 94-5; i.w.; s.al.

2-naphthylamine, N-o-tolyl- (N-2-naphthyl-o-toluidine). $C_{10}H_7NHC_6H_4CH_3$; m.w. 233.13; leaf. f. lgr.; m.p. 95-6; b.p. 400-5; s.al.

1-naphthylamine, N-p-tolyl- (N-1-naphthyl-p-toluidine), $C_{10}H_7NHC_6H_4CH_3$; m.w. 233.13; pr.f.al.; m.p. 79; b.p. 230 [10]; i.w.; s.al.

2-naphthylamine, N-p-tolyl- (N-2-naphthyl-p-toluidine). $C_{10}H_7NHC_6H_4CH_3$; m.w. 233.13; red leaf. f.al.; m.p. 102-3; s.al.

1-naphthylamine 3:6:8-trisulfonic acid. See Koch acid.

α-naphthyl cyanide. See 1-naphthonitrile.

β-naphthyl cyanide. See 2-naphthonitrile.

1, 2-naphthylenediamine (1, 2-naphthalenediamine; 1, 2-diaminonaphthalene). $C_{10}H_6(NH_2)_2$; m.w. 158.09; leaf. f.w.; m.p. 96; b.p. 150-1 [0.5]; s.w.; s.al.

1, 4-naphthylenediamine (1, 4-naphthalenediamine; 1, 4-diaminonaphthalene). $C_{10}H_6(NH_2)_2$; m.w. 158.09; pr. f.h.w.; m.p. 120; s.w.; s.al.

1, 5-naphthylenediamine (1, 5-naphthalenediamine; 1, 5-diaminonaphthalene). $C_{10}H_6(NH_2)_2$; m.w. 158.09; col. pr. f.et.; m.p. 189.5; s.w.; s.al.

1, 6-naphthylenediamine (1, 6-naphthalenediamine; 1, 6-diaminonaphthalene). $C_{10}H_6(NH_2)_2$; m.w. 158.09; need. f.w.; m.p. 78; s.w.; s.al.

1, 7-naphthylenediamine (1, 7-naphthalenediamine; 1, 7-diaminonaphthalene). $C_{10}H_6(NH_2)_2$; m.w. 158.09; leaf. f.bz., need. f.w.; m.p. 78; s.w.; s.al.

1, 8-naphthylenediamine (1, 8-naphthalenediamine; 1, 8-diaminonaphthalene). $C_{10}H_6(NH_2)_2$; m.w. 158.09; col. cr.f.al.; m.p. 66.5; s.w.; s.al.

2, 3-naphthylenediamine (2, 3-naphthalenediamine; 2, 3-diaminonaphthalene). $C_{10}H_6(NH_2)_2$; m.w. 158.09; leaf. f.et.; m.p. 191; s.al.

2, 6-naphthylenediamine (2, 6-naphthalenediamine; 2, 6-diaminonaphthalene). $C_{10}H_6(NH_2)_2$; m.w. 158.09; need. f.w.; m.p. 216; s.w.; s.al.

naphthylene ethylene. See acenaphthene.

1-naphthyl ether (1-[1-naphthoxy]-naphthalene; α-dinaphthyl ether). $(C_{10}H_7)_2O$; m.w. 270.11; col. leaf.; m.p. 110; b.p. >360; i.w.; s.al.

1, 2′-naphthyl ether (α, β′-dinaphthyl ether; 1-[2-naphthoxy] naphthalene). $C_{10}H_7OC_{10}H_7$; m.w. 270.11; need. f.al. + et.; m.p. 81; b.p. 264 [15]; i.w.; s.al.

2-naphthyl ether (2-[2-naphthoxy]-naphthalene; β-dinaphthyl ether). $(C_{10}H_7)_2O$; m.w. 270.11; col. need. f.al.; m.p. 105; i.w.; s.al.

1-naphthyl ketone (α, α-dinaphthyl ketone). $C_{10}H_7COC_{10}H_7$; m.w. 282.11; need. f.et.; m.p. 104; s.al.

1, 2′-naphthyl ketone (α, β′-dinaphthyl ketone). $C_{10}H_7COC_{10}H_7$; m.w. 282.11; col. need. f.al.; m.p. 136-7.

2-naphthyl ketone (β, β′-dinaphthyl ketone). $C_{10}H_7COC_{10}H_7$; m.w. 282.11; need. f.et.; m.p. 125.5; i.w.

naphthyl mercaptan. See naphthol, thio-.

β-naphthyl methyl ether. See ether, methyl 2-naphthyl.

2-naphthyl salicylate. See betol.

narceine. $C_{23}H_{27}NO_8 \cdot 3H_2O$; m.w. 499.27; col. pr. f.w.; m.p. anh. 170.

narceine, bisulfate. $C_{23}H_{27}NO_8 \cdot H_2SO_4 \cdot 10H_2O$; m.w. 723.45; cr. powd. or need.; s.w.; s.al.

narceine, hydrochloride. $C_{23}H_{27}NO_8 \cdot HCl \cdot 3H_2O$; m.w. 535.73; yel. cr. f. HCl; m.p. anh. 192; s.w.; s.al.

narcotic. A drug producing sleep or alleviating pain by depressing the sensory system.

narcotine. $C_{22}H_{23}NO_7$; m.w. 413.19; col. rhomb. need. f.al.; m.p. 175.

dl-narcotine. See gnoscopine.

narcotine hemipic acid. See hemipic acid.

narcotine, hydrochloride. $C_{22}H_{23}NO_7 \cdot HCl \cdot H_2O$; m.w. 467.67; wh. lust. cr.; m.p. 197-8; s.w.

naringin. $C_{33}H_{36}O_{18}$(?); m.w. 496.22(?); sm. pr.; m.p. anh. 171; s.w.; s.al.

nascent. In an active state, as at the moment of generation; "new-born," still in the atomic state, as oxygen at the instant of release from hydrogen peroxide.

nascent soap. Soap formed in solution for immediate use.

native paraffin. See wax, ozokerite.

natrolite (needle zeolite). A mineral, $Na_2O \cdot Al_2O_3 \cdot 3SiO_2 \cdot 2H_2O$; rhomb., wh. also redsh., yelsh., grnsh.; sp.gr 2.18-2.25; hardness 5.0-5.5.

natron. See sodium carbonate, $Na_2CO_3 \cdot 10H_2O$.

natural gas. A combustible gas, consisting chiefly of lower paraffin hydrocarbons, occurring with petroleum.

natural gasoline (casing-head gasoline) A gasoline condensed from a mixture of lower paraffin hydrocarbon gases saturated with vapors of low boiling liquid hydrocarbons, the mixture occurring naturally in petroleum fields.

natural logarithm. Logarithm employing the base *e*, equal to the common logarithm (base 10) multiplied by 2.3026.

natural number. See positive integer.

natural resin. See resin.

naumannite. See silver selenide.

naval stores. A collective term embracing the materials turpentine rosin, pine oil, rosin oil and spirit pine tar and pitch.

neat cement. Cement mortar without added sand.

neats foot oil. See oil, neats foot.

Necol plastic wood. A cement which can be worked like wood when set. See magnesium oxychloride cement.

nectar. A sweet fluid secreted by certain flowers, usually at the petal base by the nectar gland, this substance being gathered by bees to make honey and utilized as food by other

insects.

needle zeolite. See natrolite.

Neformolit. Plastic formed from mineral oil, formaldehyde and sulfuric acid.

negative catalysis. Decrease in the velocity of a reaction due to the presence of a substance itself not changed in the course of reaction, i.e. due to the presence of a negative catalyst.

negative crystal. Uniaxial, birefringent crystal in which the extraordinary wave length is of greater velocity.

negative glow. Luminous space between Crookes and Faraday dark spaces in a Crookes tube at moderate pressure.

negative myotrope. See myotrope, negative.

negatron. Name referring to the negative particle called an electron as distinct from the unit of negative charge, also called an electron.

Nekal A. Sodium alkyl naphthalene sulfonate; a wetting agent.

Nekal AEM. An emulsifying agent made by addition of glue as a protective colloid to an alkyl naphthalene sulfonate (Nekal BX).

Nekal BX. An alkyl naphthalene sulfonate.

Nelio resin. Natural purified wood rosin.

nematic. Pertaining to molecules tending to arrange themselves in long swarms or threadlike formations for the greater part parallel, e.g. para-azoxyanisole.

neo-. Prefix signifying new or recent.

neoarsphenamine (neosalvarsan; novarsenobenzol-billon; neodiarsenol; neokharsivan). $NH_2OHC_6H_2As{:}As-C_6H_3OHNH(CH_2O)OSNa$ (partial); yel. powd.; s.w.; s.al.; used in medicine.

neocinchophen. See quinoline, 6-methyl-2-phenyl-4-carboxylic ethyl ester.

neodiarsenol. See neoarsphenamine.

neodymium. Nd; at. wt. 144.27; yelsh. met.; s.g. 6.9.; m.p. 840; a metallic element belonging to the rare earths.

neodymium acetate. $Nd(C_2H_3O_2)_3 \cdot H_2O$; m.w. 339.36; s.w.

neodymium acetylacetonate. $Nd(CH_3COCHCOCH_3)_3$; m.w. 441.43; vlt. cr.; m.p. 114-146.

neodymium bromate. $Nd(BrO_3)_3 \cdot 9H_2O$; m.w. 690.16; hex. red.; m.p. 66.7; b.p. $-9H_2O$, 150; s.w.

neodymium bromide. $NdBr_3$; m.w. 384.02; grn. cr.; s.w.

neodymium carbide. NdC_2; m.w. 168.27; hex. leaf. yel.; s.g. 5.15.

neodymium chlorate, per-, hexaantipyrine. $Nd(COC_{13}H_{12}N_2)_6(ClO_4)_3$; m.w. 2219.30; rose hex. cr.; m.p. 285-9 d.; s.w.

neodymium chloride. $NdCl_3$; m.w. 250.64; rose-vlt. pr.; s.g. 4.134 [25]; m.p. 784; s.w.; s.al.

neodymium chloride. $NdCl_3 \cdot 6H_2O$; m.w. 358.73; rhomb. red; s.g. 2.282 [16.5]; m.p. 124; b.p. $-6H_2O$, 160; s.w.; s.al.

neodymium iodide. NdI_3; m.w. 525.03; blk. cr. powd.; m.p. 775 ± 3.

neodymium iodide, hexaantipyrine. $[Nd(COC_{13}H_{12}N_2)_6I_3]$; m.w. 2301.69; rose cr.; m.p. 270-2; s.w.

neodymium molybdate. $Nd_2(MoO_4)_3$; m.w. 768.54; tetr. 2.005; s.g. 5.14 [12]; m.p. 1176.

neodymium nitride. NdN; m.w. 158.28; blk. powd.

neodymium oxalate. $Nd_2(C_2O_4)_3 \cdot 10H_2O$; m.w. 732.70; rose cr.; i.w.

neodymium oxide. Nd_2O_3; m.w. 336.54; lt. bl. powd. red fluores.; s.g. 7.24; s.w.

neodymium rubidium nitrate. $Nd(NO_3)_3 \cdot 2RbNO_3 \cdot 4H_2O$; m.w. 697.25; redsh. vlt. pl.; m.p. 47; b.p. $-4H_2O$.

neodymium sulfate. $Nd_2(SO_4)_3 \cdot 8H_2O$; m.w. 720.84; monocl. red.; s.g. 2.85; s.w.

neodymium sulfide. Nd_2S_3; m.w. 384.72; olive grn. powd.; s.g. 5.179 [11]; i.w.

neofat. Refined fatty acids of fish, animal and vegetable origin.

neohexane. See butane, 2, 2-dimethyl-.

neokharsivan. See neoarsphenamine.

Neolan Salt II. A quaternary salt of an organic base having a range of $C_{12}H_{25}$ or higher; an assistant for dyeing Neolan dyes.

Neomerpin N. Naphthalene sulfonic acid; a wetting agent.

neon. Ne; at. wt. 20.183; col., wholly inert gas; s.g. 0.9002° g/l; lq. 1.204$^{-245.9}$; m.p. −248.67; b.p. −245.9; s.w.; one of the rare gases; used in neon tube signs.

Neopen SS. Sodium abietene sulfonate used as a wetting and dispersing agent in electroplating, textile and pickling baths; cryst. powd.; s.w.

neopentane. See propane, 2, 2-dimethyl-.

neopentyl alcohol. See 1-propanol, 2, 2-dimethyl-.

Neophax. Vulcanized vegetable oils.

Neoprene. See Duprene.

neoquinophan. See quinoline, 6-methyl-2-phenyl-4-carboxylic ethyl ester.

Neoresit. Synthetic tar-acid resin.

neosalvarsan. See neoarsphenamine.

nep. Small knots in inferior cotton.

neper. Unit of relationship between two quantities of power, equal to 0.8686 bel in acoustics.

nephelite (nepheline, elaeolite). A mineral, $(Na,K)_4Al_4Si_9O_{34}$ or $NaAlSiO_4$; hex., col. wh., yelsh., gray or red; sp.gr. 2.55-2.65; hardness 5.5-6.0.

nephelometer (turbidimeter; tyndallmeter). Instrument for comparing turbidities of liquids by passing a beam of light at right angles thru a transparent tube containing the liquid.

nephelometry. The photometric chemical analysis of suspensions.

nephilite. A mineral, approximately $Na_8K_2Al_8Si_9O_{34}$; sp.gr. 2.55-2.65; yel., gr., red, grn., br.; source of potash.

neproton. Negatively charged particle with mass of a proton.

nepovite. A mineral, garnierite; $3(Ni,Mg)O \cdot 2SiO_2 \cdot 2H_2O$.

neral. See citral b.

Nernst effect. Potential difference between two edges of a metallic strip, in which heat flows longitudinally, when strip is placed perpendicularly across a field of magnetic force.

Nernst heat theorem. A quantitative relationship between the free and total energy changes of an interaction expressed thermodynamically.

Nernst lamp. Incandescent lamp containing a rod of refractory rare earth oxides.

Nernst potential (thermodynamic potential). Potential which exists between the interiors of the phases of a two-phase system; potential (E) of a single electrode in a galvanic cell.

nerol. $C_{10}H_{18}O$; m.w. 154.14; sp.gr. 0.881; b.p. 226; rose odor.

neroli oil. See oil, neroli.

nerolin (new). See ether, ethyl 2-naphthyl.

nerolin (old). See ether, methyl 2-naphthyl.

nerve. Snap or spring of an elastic material when extended, e.g. rubber; in biology, the specialised tissue which transmits impulses from one part of the animal organism to another.

nerve root. See cypripedium.

nesquehonite. See magnesium carbonate.

Nessler's solution. A strongly alkaline solution of potassium and mercuric iodides forming a complex, K_2HgI_4; used as a test for extremely small amounts of ammonia, with which it turns yellow.

Nestorite. Synthetic tar-acid resin used for molding and laminating.

Neuberg ester. Fructofuranose-monophosphate.

Neumann triangle. Graphical representation of equilibrium of three surface tensions at point of contact of two immiscible liquids with air.

neurine (trimethylvinylammonium hydroxide). $CH_2{:}CHN(CH_3)_3OH$; m.w. 103.11; syrup; s.w.; s.al.

neutral. Neither acidic nor basic; having a pH of 7, as pure water.

neutral axis. Line of intersection of a cross-section of a rod or beam with neutral layer.

neutral curve. Curve of pressures and temperatures on every point of which the specific volumes of the solid and liquid phases are equal.

neutral lard. High grade lard product obtained from leaf fat of hogs.

neutral layer. Layer perpendicular to plane of flexure which does not alter in length when the member, in which it lies, is bent.

neutral soda. See modified soda.

neutralization. Chemical reaction between an acid and base in such precise proportions that the characteristic properties of each disappear, e.g. $NaOH + HCl \rightarrow NaCl + H_2O$; in modern terminology, the transfer of a proton from a cation of the acid to the anion of the base producing a non-ionized molecule of the substance that serves as a reference substance (solvent).

neutralization equivalent. One equivalent weight (q.v.) of an acid.

neutralized system. A system containing both an electron donor and acceptor which are capable of interaction so that each is stabilized by the other, e.g. N—C=O.

neutret. See neutrino.

neutrino (neutret). Neutron of electromic mass or lighter.

neutrodyne. Radio circuit in which "feed-back" is controlled by neutralizing condensers.

neutron. Stable particle of about size of proton but without an electrical charge.

névé. Granular snow in perennial snow-fields.

Nevile-Winther acid. See 1-naphthol-4-sulfonic acid.

Nevillac. A phenol-indene-coumarone resin; a viscous liquid or solid depending upon the manufactured grade; i.w.; s.al.; Nevillac is compatible with numerous materials making it useful in lacquers, varnishes, paints, inks, paper coaters, adhesives.

Neville (Nevindene). Synthetic coumarone-indene resin.

Nevindene. See Neville.

newberyite. A mineral, $HMgPO_4 \cdot 3H_2O$; rhomb., wh. cryst.; sp.gr. 2.10; hardness 3.0-3.5.

Newton rings. Interference bands, circular in form, produced by light reflected from glass-air interfaces of convex and plane glass surfaces.

Newton's laws of motion.

I. Every body continues in its state of rest or of uniform motion in a straight line unless compelled to change that state by the action of some outside force.

II. Change of motion is proportional to force applied and takes place in the direction of the line of action of the force.

III. To every action, there is always an equal and opposite reaction.

Newtonian force. Mutual interaction of forces which conforms to inverse-square law, e.g. gravity.

Newtonian liquid. Liquid conforming to the law that the homogeneous shearing stress is the product of the coefficient of viscosity and rate of shear.

ngai camphor. See 1-borneol.

niccolite (arsenic nickel, nickelin). A mineral, NiAs; hex., lt. copper-red; sp.gr. 7.33-7.67; hardness 5.0-5.5.

nicholsonite. Variable aragonite; $CaCO_3$, containing 1-10% zinc.

nichrome. An alloy of nickel and chromium of high melting point, resistant to oxidation at red heat; used in electrical heating units; Ni 60, Cr 16, Fe 24, C 0.1.

nickel. Ni; at. wt. 58.69; cub. silvery metal; s.g. 8.90; m.p. 1452; b.p. 2900; i.w.; used in alloys and electroplating.

nickel acetate. $Ni(C_2H_3O_2)_2$; m.w. 176.74; grn. pr.; s.g. 1.798; s.w.; i.al.

nickel ammonium bromide. See nickel bromide ammonia.

nickel ammonium chlorate. See nickel chlorate ammonia.

nickel ammonium chloride. $NiCl_2 \cdot NH_4Cl \cdot 6H_2O$; m.w. 291.19; monocl. grn., deliq.; s.g. 1.645; s.w.

nickel ammonium chloride. See nickel chloride ammonia.

nickel ammonium iodide. See nickel iodide ammonia.

nickel ammonium nitrate. $Ni(NO_3)_2 \cdot 4NH_3 \cdot 2H_2O$; m.w. 286.86; grn. cr.; s.w.; i.al.

nickel ammonium sulfate. $NiSO_4 \cdot (NH_4)_2SO_4 \cdot 6H_2O$; m.w. 394.98; monocl. dk. bl.-grn.; s.g. 1.923; s.w.; i.al.

nickel arsenate, ortho-. $Ni_3(AsO_4)_2$; m.w. 453.93; yelsh.-grn. powd.; s.g. 4.98; i.w.

nickel arsenide (niccolite). NiAs; m.w. 133.62; hex.; s.g. 7.57°; m.p. 968; i.w.

nickel arsenite, ortho-, hydrogen. $Ni_3H_4(AsO_3)_4 \cdot H_2O$; m.w. 691.85; grn. wh.; i.w.

nickel boride. NiB; m.w. 69.51; prisms; s.g. 7.39 [18].

nickel bromate. $Ni(BrO_3)_2 \cdot 6H_2O$; m.w. 422.62; monocl.; s.g. 2.575; s.w.

nickel bromide. $NiBr_2$; m.w. 218.52; yel.-br., deliq.; s.g. 4.64 [25]; s.w.; s.al.

nickel bromide. $NiBr_2 \cdot 3H_2O$; m.w. 272.57; yelsh.-grn. need., deliq.; m.p. $-3H_2O$, 200; s.w.; s.al.

nickel bromide ammonia. $NiBr_2 \cdot 6NH_3$; m.w. 320.71; violet powd.; s.g. 1.837; s.w.

nickel carbonate. $NiCO_3$; m.w. 118.69; rhomb. lt. grn.; s.w.

nickel carbonate, basic. $2NiCO_3 \cdot 3Ni(OH)_2 \cdot 4H_2O$; m.w. 587.56; lt. grn. cr. or br. powd.; i.w.

nickel carbonyl. $Ni(CO)_4$; m.w. 170.69; col. volat. inflam. liq. or need.; s.g. 1.32 [17]; m.p. −25; b.p. 43; s.w.; s.al.

nickel chlorate. $Ni(ClO_3)_2 \cdot 6H_2O$; m.w. 333.70; dk. red; s.g. 2.07; m.p. d. 80; s.w.

nickel chlorate, per-. $Ni(ClO_4)_2 \cdot 6H_2O$; m.w. 365.70; hex. need. grn.; m.p. 149; s.w.

nickel chlorate ammonia. $Ni(ClO_3)_2 \cdot 6NH_3$; m.w. 327.79; s.g. 1.52; m.p. 180; s.w. giv. $Ni(NH_3)_4$.

nickel chloride. $NiCl_2$; m.w. 129.60; yel. sc., deliq.; s.g. 3.55; b.p. 973; s.w.

nickel chloride. $NiCl_2 \cdot 6H_2O$; m.w. 237.70; monocl. grn., deliq.; s.w.; s.al.

nickel chloride ammonia. $NiCl_2 \cdot 6NH_3$; m.w. 231.79; s.w.; i.al.

nickel cyanide. $Ni(CN)_2$; m.w. 110.71; i.w.

nickel cyanide. $Ni(CN)_2 \cdot 4H_2O$; m.w. 182.77; lt. grn. pl. or powd., pois.; m.p. $-4H_2O$, 200; i.w.

nickel dibenzyl dioxime. $Ni[C_6H_5C_2(NO)_2C_6H_5]$; m.w. 536.7; i.w.; s.al.; pigment for paints, lacquers, cosmetics, cellulose compounds.

nickel dimethylglyoxime. $Ni[(CH_3)_2(CNO)_2H]_2$; m.w. 288.83; scarlet red cr.; m.p. subl. 250; i.w.; s. abs. al.

nickel ferrocyanide. $Ni_2Fe(CN)_6 \cdot 11H_2O$; m.w. 527.44; grn. wh.; i.w.

nickel fluoride. NiF_2; m.w. 96.69; grn. quad.; s.g. 4.63; s.w.; i.al.

nickel fluoride acid. $NiF_2 \cdot 5HF \cdot 6H_2O$; m.w. 304.82; trig. blue-grn.; s.g. 2.132; s.w.

nickel fluosilicate. $NiSiF_6 \cdot 6H_2O$; m.w. 308.84; trig. grn.; s.g. 2.134; s.w.

nickel fluosilicate, tetrapyridine. $Ni(C_5H_5N)_4SiF_6$; m.w. 516.94; rhomb. bl.-grn.; s.g. 2.307.

nickel formate. $Ni(CHO_2)_2 \cdot 2H_2O$; m.w. 184.74; grn. cr.; s.g. 2.154; s.w.

nickel hydroxide(ic). $Ni(OH)_3$; m.w. 109.71; blk. amor. powd.; i.w.

nickel hydroxide(ous). $Ni(OH)_2$; m.w. 92.71; grn. amor. or cr.; s.g. 4.1; s.w.

nickel hydroxide(ous). $4Ni(OH)_2 \cdot H_2O$; m.w. 388.84; lt. grn. powd.; s.g. 4.36; i.w.

nickel iodide. NiI_2; m.w. 312.53; blk., deliq.; s.g. 5.834; s.w.; s.al.

nickel iodide ammonia. $NiI_2 \cdot 6NH_3$; m.w. 414.72; s.g. 2.101.

nickel nitrate. $Ni(NO_3)_2 \cdot 6H_2O$; m.w. 290.80; monocl. grn., deliq.; s.g. 2.05; m.p. 56.7; b.p. 136.7; s.w.; s.al.

nickel nitrate ammonia. See nickel ammonium nitrate.

nickel oxalate. $NiC_2O_4 \cdot 2H_2O$; m.w. 182.72; lt.-grn. powd.; i.w.

nickel oxide (ous, ic). Ni_2O_3; m.w. 240.07; cub. or amor. gray-blk.; i.w.

nickel oxide, mono- (bunsenite). NiO; m.w. 74.69; cub. grn.-blk.; s.g. 7.45; m.p. to Ni_2O_3, 400; b.p. $-O_2$, 600; i.w.

nickel oxide, sesqui-. Ni_2O_3; m.w. 165.38; gray-blk. powd.; s.g. 4.83; m.p. $-O_2$, 600; i.w.

nickel oxyiodide. $NiI_2 \cdot 9NiO \cdot 15H_2O$; m.w. 1254.97; i.w.

nickel phosphate, ortho-. $Ni_3(PO_4)_2 \cdot 7H_2O$; m.w. 492.22; grn. powd.; i.w.

nickel phosphate, pyro-. $Ni_2P_2O_7 \cdot 6H_2O$; m.w. 399.51; grn.; s.g. anh. 3.93 [20]; i.w.

nickel phosphide. Ni_5P_2; m.w. 238.11; dk. grn.-blk.; s.g. 5.99; i.w.

nickel phosphide. Ni_2P; m.w. 148.40; gray cr.; s.g. 6.31 [15]; m.p. 1112; i.w.

nickel phosphite, hypo-. $Ni(H_2PO_2)_2 \cdot 7H_2O$; m.w. 314.87; grn.; s.g. 1.82; s.w.

nickel potassium cyanide. $Ni(CN)_2 \cdot 2KCN \cdot H_2O$; m.w. 258.94; monocl. cr. or powd., red-yel.; s.g. 1.875 [11]; m.p. $-H_2O$, 100; s.w.

nickel potassium sulfate. $K_2SO_4 \cdot NiSO_4 \cdot 6H_2O$; m.w. 437.10; monocl. bl.; s.g. 2.124; m.p. d. <100; s.w.

nickel salts, double. See nickel ammonium sulfate.

nickel salts, single. See nickel sulfate.

nickel selenide. NiSe; m.w. 137.89; cryst.; s.g. 8.46; i.w.

nickel silver. Cu:Ni:Zn(55:18:27); sp.gr. 8.7; m.p. 1055; resistant to corrosion.

nickel sulfate. $NiSO_4$; m.w. 154.75; cub. yel.; s.g. 3.68; m.p. $-SO_3$, 840; s.w.; i.al.

nickel sulfate. $NiSO_4 \cdot 6H_2O$; m.w. 262.84; tetr. blk. or monocl. grn.; s.g. 2.07; m.p. tr. 53.3; b.p. $-6H_2O$, 280; s.w.; s.al.

nickel sulfate (morenosite). $NiSO_4 \cdot 7H_2O$; m.w. 280.86; rhomb. grn.; s.g. 1.948; m.p. $-H_2O$, 31.5; 99; b.p. $-6H_2O$, 103; s.w.; s.al.

nickel sulfide(ous, ic) (polydymite). Ni_3S_4; m.w. 304.31; cub. gray-blk.; s.g. 4.7.

nickel sulfide, mono- (millerite). NiS; m.w. 90.75; trig. or amor. blk.; s.g. 4.60; m.p. 797; s.w.

nickel sulfide, sub-. Ni_2S; m.w. 149.44; yel. cr.; s.g. 5.52; i.w.

nickel sulfite. $NiSO_3 \cdot 6H_2O$; m.w. 246.84; tetrah. grn.; i.w.

nickel-telluride. See melonite.

nickelic. Designation for compounds in which nickel is trivalent, e.g. nickelic oxide, Ni_2O_3.

nickeliferous pyrrhotite. Iron sulfide ore containing 0-6% of nickel.

nickelin. See niccolite.

nickelous. Designation for compounds in which nickel is divalent, e.g. nickelous oxide, NiO.

Nicol prism. A prism constructed of two pieces of clear calcite, cut and cemented in a special manner, which will polarize a beam of light passed thru it.

nicoteine. $C_{10}H_{12}N_2$; m.w. 160.11; b.p. 267.

nicotine. $C_{10}H_{14}N_2$; m.w. 162.13; col. oil; m.p. <−80; b.p. 247.3; s.w.; s.al.

nicotine, hydrochloride (d). $C_{10}H_{14}N_2 \cdot 2HCl$; m.w. 235.05; deliq. cr.; s.w.; s.al.

nicotine, picrate. $C_{10}H_{14}N_2 \cdot 2C_6H_3N_3O_7$; m.w. 620.22; yel. needl. or pr.; m.p. 218.

nicotine, salicylate. $C_{10}H_{14}N_2 \cdot C_7H_6O_3$; m.w. 300.17; wh. pl.; m.p. 117.5; s.w.; s.al.

nicotine sulfate. $(C_{10}H_{14}N_2)_2 \cdot H_2SO_4$; m.w. 418.22; wh. cryst.; s.w.; s.al.; used in medicine, and as an insecticide.

nicotine, tartrate (nicotine bitartrate). $C_{10}H_{14}N_2 \cdot 2C_4H_6O_6 \cdot 2H_2O$; m.w. 498.25; reddish-wh. cr.; m.p. 88-90; s.w.; s.al.

nicotinic acid (3-pyridinecarboxylic acid). C_5H_4NCOOH; m.w. 123.05; col. needl.; m.p. 229-30; s.w.; vitamin PP.

nicotinic acid, 2-hydroxy-. $C_5H_3N(OH)COOH$; m.w. 139.05; needl. f.w.; m.p. a256; s.w.; s.al.

nicotinic acid, N-methylbetaine. See trigonelline.

nicotinic acid, methyl 1, 2, 5, 6-tetrahydro-1-methyl-. See arecoline.

nicotinic acid, 1, 2, 5, 6-tetrahydro-1-methyl-. See arecaidine.

nicotyrine (3-[1-methyl-2-pyrryl] pyridine; dipyridine). $C_{10}H_{10}N_2$; m.w. 158.09; needl. f.h.w.; m.p. 108; b.p. 286-90 [720]; s.w.; s.al

niger (nigre). Dark brown soap formed containing impurities, formed in soap manufacture.

nigrine. See rutile.

nigrosines. A class of blue-black dyes; used in ink, shoe polish, etc.

Nile blue. An oxasine dyestuff.

niobe oil. See benzoic acid, methyl ester.

niobite. See columbite.

niobium. See columbium.

Nip-Nip. A combination of nipasol and nipagin; a preservative.

Nipagin M. Methyl ester of p-oxybenzoic acid; a preservative.

Nipasol. Propyl ester of p-oxybenzoic acid; a preservative.

Nipasol-Sodium. Sodium salt of the propyl ester of p-oxybenzoic acid; a preservative.

niter. See potassium nitrate.

niter cake. See sodium sulfate, acid.

nitom. See radon.

nitramine (nitroamine). Compound with the general type R—NH—NO_2.

nitramine, diethyl-. See diethylamine, N-nitro-.

nitramine, dimethyl-. See dimethylamine, N-nitro-.

nitramine, methylpicryl-. See tetryl.

nitramine, phenyl-. See aniline, N-nitro-.

nitramine, N-propyl-. See propylamine, N-nitro-.

nitranilic acid (2, 5-dihydroxy-3, 6-dinitroquinone). $(NO_2)_2C_6O_2(OH)_2$; m.w. 230.03; lng. yel. pl. f. acet.; m.p. 100; s.w.; s.al.

nitranilide. See aniline, N-nitro-.

nitraniline, para-. See aniline, p-nitro-.

p-nitraniline, o-chlor-. See aniline, 2-chloro-4-nitro-.

nitrate. Salt of nitric acid, e.g. sodium nitrate, $NaNO_3$.

nitrating acid. See mixed acid.

nitrating agent. An agent for preparing nitro compounds.

nitration. The introduction of the nitro group, NO_2, into an organic compound.

nitrazol. See 2-naphthol, 1-p-phenylazo-.

nitre. See niter.

nitric acid. HNO_3; m.w. 63.02; col. corros. pois. liq.; s.g. 1.502; m.p. −42; b.p. 86; s.w.; d. al. viol.

nitric diethylamide. See diethylamine, N-nitro-.

nitric dimethylamide. See dimethylamine, N-nitro-.

nitric ether. See ethyl nitrate.

nitridation. Formation of nitrides, as exemplified by heating metals in atmosphere of nitrogen.

nitride. A compound of a metal and nitrogen, e.g. magnesium nitride, Mg_3N_2.

nitrification. Oxidation of ammonia or ammonium salts in the soil to nitrates and nitrites, thru the agency of bacteria.

nitrifying bacteria. Bacteria in the soil which employ the oxygen in the air to oxidize ammonia (from fertilizer or decaying matter) to nitric acid, thus converting the nitrogen into a form available to plants.

nitrile. Compound of the general formula R—C≡N; an organic cyanide.

nitrite. Salt of nitrous acid, e.g. sodium nitrite, $NaNO_2$.

nitro rayon. See rayon, nitro.

nitroamine. See nitramine.

nitroborite. See barium nitrate.

nitrobenzol. See benzene, nitro-.

nitrocalcite. See calcium nitrate.

nitrocellulose. See cellulose, hexa-, penta-, tetra- or trinitrate.

nitrocellulose rayon. See rayon, nitro.

nitrochlorbenzol, ortho-. See benzene, 1-chloro-2-nitro-.

nitrochlorbenzene, meta-. See benzene, 1-chloro-3-nitro-.

nitrocotton. Nitrocellulose.

nitroerythrite. See erythritol, tetranitrate.

nitroform (trinitromethane). $CH(NO_2)_3$; m.w. 151.03; col. oil or wh. cr.; m.p. 15; s.w.

nitrogen. N; at. wt. 14.008; col. gas; col. liq. or cub. cr. at low temp.; s.g. 1.2506° g/l; liq. 0.808 [−195.8]; s. 1.026 [−252.5]; m.p. −209.86; b.p. −195.8; s.w.; s.al.; the chief component of the atmosphere, of which it comprises four-fifths.

nitrogen base. Compound, such as an amine, which may be considered a substitution product of ammonia, NH_3, a compound containing trivalent nitrogen, capable, like ammonia of combining with acids with formation of salts containing pentavalent nitrogen.

nitrogen equilibrium. Equality of nitrogen intake from proteins and nitrogen excreted in the urine in the normal adult.

nitrogen fixation. Formation of nitrogen compounds, such as ammonia and nitrates, from the free nitrogen of the air.

nitrogen chloride, tri-. NCl_3; m.w. 120.38; yel. oil or rhomb. cr.; s.g. 1.653; m.p. <−40; b.p. <71 exp. 95; i.w.

nitrogen fluoride, tri-. NF_3; m.w. 71.01; col. gas; s.g. liq. 1.537 [−129]; m.p. −216.6; b.p. −120; s.w.

nitrogen iodide, tri-. NI_3; m.w. 394.77; blk.; m.p. exp.; i.w.

nitrogen iodide, tri- (monoammonate). $NI_3 \cdot NH_3$; m.w. 411.80; rhomb. dk. red; s.g. 3.5; m.p. d. >20; b.p. exp.; i.w.; i. abs. al.

nitrogen oxide(ic). NO (or N_2O_2); m.w. 30.01; col. gas; blue liq. and solid; s.g. 1.3402 g/l; liq. 1.269 [−150.5]; m.p. −163.6; b.p. −151.8; s.w.; s.al.

nitrogen oxide, di-. See nitrogen oxide, per-.

nitrogen oxide, mon-. N_2O; m.w. 44.02; col. gas or liq. or cub. cr.; s.g. 1.977 g/l; liq. 1.226 [−89]; m.p. −102.4; b.p. −89.5; s.w.

nitrogen oxide, pent-. N_2O_5; m.w. 108.02; hex. (rhomb.) wh.; s.g. 1.642 [15]; m.p. 30; b.p. 47 d.; s.w.

nitrogen oxide, per- (dioxide, tetroxide). NO_2 (or N_2O_4); m.w. 46.01 or 92.02; col. solid (N_2O_4); yel. liq. or red-br. gas; s.g. 1.491 [0]; m.p. −9.3; b.p. 21.3 d.; s.w.

nitrogen oxide, tetr-. See nitrogen, oxide, per-.

nitrogen sulfide, penta-. N_2S_5; m.w. 188.32; red liq., gray solid; s.g. 1.901 [15]; m.p. 11; b.p. d.; i.w.; s.al

nitrogen oxide, tri-. N_2O_3; m.w. 76.02; red. br. gas; bl. solid or liq.; s.g. 1.447 [1]; m.p. −102; b.p. 3.5 d.; s.w.

nitrogenize. To combine with nitrogen, or introduce nitrogen into.

nitrogenous. Containing nitrogen, e.g. protein or nitrates.

nitroglycerin (glyceryl trinitrate; glyceryl nitrate; trinitrin; glonoin). $C_3H_5(ONO_2)_3$; m.w. 227.06; col.-yel. liq.; m.p. 2.9; s.al

nitroglycol. $C_2H_4(NO_2)_2$; m.w. 152.03; colorl.; sp.gr. 1.5; m.p. −22.3; an explosive.

nitrolic acid, ethyl-. See aceto-nitro- acid.

nitrolic acid, methyl-. See formo-nitro- acid.

nitromannite. See mannitol, hexanitro-

nitrometer. Eudiometer for measuring nitrogen evolved from certain reactions.

nitron (4, 5-dihydro-1, 4-diphenyl-5-phenylimino-1, 2, 4-triazole). $C_{20}H_{16}N_4$; m.w. 312.16; yel. needl. i.w., s.al.

nitrosamine. Yellow, aromatic, organic compound of general formula $R_1 \diagdown N—NO$.

nitrosamine, N-benzylphenyl-. See benzylamine, N-nitroso-N-phenyl-.

nitrosamine, diethyl-. See diethylamine, N-nitroso-.

nitrosamine, diisopropyl-. See diisopropylamine, N-nitroso-.

nitrosamine, dimethyl-. See dimethylamine, N-nitroso-.

nitrosamine, diphenyl-. See diphenylamine, N-nitroso-.

nitrosamine, dipropyl-. See dipropylamine, N-nitroso-.

nitrosamine, methylphenyl-. See aniline, N-methyl-N-nitroso-.

nitrosation. Reaction between nitrous acid and a nuclear hydrogen atom.

nitrostarch. A nitrated starch preparation; used in safety explosives.

nitrosyl bromide. NOBr; m.w. 109.92; br. gas or dk. br. liq.; s.g. >1; m.p. −55.5; b.p. −2; i.w.

nitrosyl chloride. NOCl; m.w. 65.47; yel. gas or yel.-red liq. or cr.; s.g. 2.99 g/l; liq. 1.417 [−12]; m.p. −64; b.p. −5.5.

nitrosyl fluoride. NOF; m.w. 49.01; col. gas; s.g. 2.176 g/l; m.p. −1; b.p. −56; s.w. d. to HNO_2 + HF.

nitrosyl sulfuric acid (chamber crystals). m.w. 127.08; SO_2OHONO, rhomb. col.; m.p. 73.

nitrosyl sulfuric anhydride. (Nitrosulfonic anhydride). $(NO_2)_2SO_4$; m.w. 236.14; tetr.; m.p. 3; b.p. 360.

nitrous acid. The acid HNO_2, an unstable substance formed by reaction between an acid and a nitrite, of great importance in the making of dyes, where it is used for diazotization.

nitrous diethylamide. See diethylamine, N-nitroso-.

nitrous, diisopropylamide. See diisopropylamine, N-nitroso-.

nitrous dimethylamide. See dimethylamine, N-nitroso-.

nitrous, diphenylamide. See diphenylamine, N-nitroso-.

nitrous, dipropylamide. See dipropylamine, N-nitroso-.

nitrous ether. See ethyl nitrite.

nitrous oxide. Laughing gas. N_2O; m.w. 44.02; formed by heating ammonium nitrate; used in anesthesia.

nitroxyl chloride (nitryl chloride). NO_2Cl; m.w. 81.47; pa. yel. br. gas; s.g. 2.57 g/l; liq. 1.32 [14]; m.p. <−; b.p. 5.

nitroxyl fluoride (nitryl fluoride). NO_2F; m.w. 65.01; col. gas and solid; s.g. 2.90 g/l; m.p. −139; b.p. −63.

nitryl chloride. See nitroxyl chloride.

nitryl fluoride. See nitroxyl fluoride.

nivenite. A variety of uraninite containing ytterbium.

noble gas. A rare inert gas such as helium, neon, argon, etc.

noble metals. The unreactive metals such as gold, platinum, etc. not readily dissolved by acids and not oxidized by heating in air.

nodal points. Two points on the axis of a lens such that a ray entering the lens in the direction of one, leaves it from the other and parallel to the original direction.

node. Point, line, or surface of no displacement in a system of stationary waves, the distance from one node to the adjacent one being one half a wave-length.

...e. See samarskite.
... Short wool fibers used for yarns.
...gram (nomograph). Diagram for ... rapid determination of the value ... quantity which is a function of ... or more other quantities.
...graphy. Science of graphical representation of functions.
...drying oil. See oil, non-drying.
...ferrous. Containing no iron, term ...plying to alloys.
...metal. Element which forms acidic ...ides, and is non-lustrous and a ...n-conductor of electricity; it more ...adily becomes electronegative than ...ectropositive because of its greater ...endency to gain electrons. The ...n-metals are the halogens, oxygen, ...ulfur, selenium, tellurium, nitrogen, ...hosphorus, arsenic, carbon, silicon ...nd boron; all other elements are ...etals or the inert gases.
...-polar. Type of substance whose ...olecules possess no permanent ...lectric moments (q.v.); those com...ounds whose atoms are linked by ...haring of electrons; which are non-...lectrolytes in the liquid state and ...which do not ionize (or ionize very ...weakly in solution).
...-polar linkage. See linkage, non-polar.
...nadecane (n-nonadecane) $CH_3(CH_2)_{17}CH_3$; m.w. 268.31; leaf.; m.p. ...22; b.p. 330; i.w.; s.al.
...nadecanoic acid (n-nonadecylic acid). $CH_3(CH_2)_{17}COOH$; m.w. 298.30; glit. leaf f. al.; m.p. 66.5; b.p. 296 [100]; i.w.; s.al.
...nadecanol (n-nonadecyl alcohol). $CH_3(CH_2)_{17}OH$; m.w. 284.31; opaque cr.; m.p. 62.
...-nonadecanone (caprinone; dinonyl ketone) $(C_9H_{19})_2CO$; m.w. 282.30; leaf f.al.; m.p. 58; b.p. >250; i.w.; s.al.
...nonadecyl alcohol. See 1-nonadecanol.
...nonadecylic acid. See nonadecanoic acid.
...nanemethylene glycol. See 1, 9-nonanediol.
...nanal, oxime. See pelargonaldehyde, oxime.
...nanamide. See pelargonamide.
...nane (n-nonane). $CH_3(CH_2)_7CH_3$; m.w. 128.16; col. liq.; m.p. 53-7; b.p. 150.72; i.w.; s.al.
...nanedioic acid. See azelaic acid.
..., 9-nonanediol (nonamethylene glycol; enneamethylene glycol) CH_2OH-$(CH_2)_7CH_2OH$; m.w. 160.16; b.p. 147-50 [3]; s.w.; s.al.
...nanenitrile. See pelargononitrile.
...nanoic acid. See pelargonic acid.
1-nonanol (n-nonyl alcohol). $CH_3(CH_2)_7CH_2OH$; m.w. 144.16; col. liq.; m.p. −5; b.p. 213.5; i.w.; s.al.
2-nonanol (heptylmethylcarbinol). $CH_3CHOH(CH_2)_6CH_3$; m.w. 144.16; col. liq.; m.p. −45; b.p. 193-4; i.w.; s.al.
3-nonanol (ethylhexylcarbinol). $CH_3CH_2CHOH(CH_2)_5CH_3$; m.w. 144.16; liq.; m.p. −22; b.p. 194-5 [760]; i.w.; s.al.
4-nonanol (amylpropylcarbinol). $CH_3(CH_2)_3CHOH(CH_2)_4CH_3$; m.w. 144.16; liq.; b.p. 192-3; i.w.; s.al.
5-nonanol (dibutylcarbinol). $(C_4H_9)_2CHOH$; m.w. 144.16; thick oil; b.p. 194; i.w.; s.al.
5-nonanol, 2, 8-dimethyl- (diisoamylcarbinol). $[(CH_3)_2CH(CH_2)_2]_2CHOH$; m.w. 172.19; liq.; b.p. 105 [9]; i.w.; s.al.
1-nonanol, 2-methyl- (2-heptyl-2-methylethanol). $CH_3(CH_2)_6$-$CH(CH_3)CH_2OH$; m.w. 158.17; liq.; b.p. 118 [24]; i.w.; s.al.
2-nonanone (heptyl methyl ketone). $CH_3CO(CH_2)_6CH_3$; m.w. 142.14; liq.; m.p. −8.2; b.p. 194-6; i.w.; s.al.
3-nonanone (ethyl hexyl ketone). C_2H_5-$CO(CH_2)_5CH_3$; m.w. 142.14; pr.; m.p. −8; b.p. 190; s.al.
5-nonanone (dibutyl ketone). $(CH_3$-$CH_2CH_2CH_2)_2CO$; m.w. 142.14; col. liq.; m.p. −5.9; b.p. 186-7; s.w.; s.al.
5-nonanone, 2, 8-dimethyl- (diisoamyl ketone; isocaprone; diisopentyl ketone). $[(CH_3)_2CH(CH_2)_2]_2CO$; m.w. 170.17; yel. oil; m.p. 14.6; b.p. 226; i.w.; s.al.
nonanoyl chloride. See pelargonyl chloride.
1-nonene (α-nonylene). $CH_3(CH_2)_6$-$CH:CH_2$; m.w. 126.14; col. liq.; b.p. 149.9; i.w.; s.al.
1-nonine. See 1-nonyne.
n-nonyl alcohol. See 1-nonanol.
nonylamine (n-nonylamine). CH_3-$(CH_2)_7CH_2NH_2$; m.w. 143.17; liq.; b.p. 195; i.w.; s.al.
n-nonyl cyanide. See caprinitrile.
α-nonylene. See 1-nonene.
n-nonylic acid. See pelargonic acid.
nonylone. See 9-heptadecanone.
nonyl sulfate (di-n-nonyl sulfate). $[CH_3$-$(CH_2)_8]_2SO_4$; m.w. 350.36; m.p. 41.9-2.1.
1-nonyne (1-nonine; n-heptylacetylene). $CH:C(CH_2)_6CH_3$; m.w. 124.12; col. liq.; m.p. −36; b.p. 160 [745]; i.w.; s.al.
norcamphane, 2, 2-dimethyl-3-methylene-. See camphene.
norcamphane, 7, 7-dimethyl-2-methylene-. See α-fenchene.
norcamphane, 2-keto-1, 7, 7-trimethyl-. See camphor.
norcamphane, 1, 7, 7-trimethyl-. See camphane.
norcamphane, 2, 2, 3-trimethyl-. See isocamphane.
2-norcamphanone, 1, 3, 3-trimethyl-. See fenchone.

Nordhausen acid. Fuming sulfuric acid, sp.gr. 1.89-1.90
Norit. Active decolorizing and filtering form of amorphous vegetable carbon.
d-norleucine (d-α-aminocaproic acid; d-2-aminohexanoic acid; d-glycoleucine). $CH_3(CH_2)_3CH(NH_2)COOH$; m.w. 131.11; hex. leaf. f.w.; i.al.
dl-norleucine (dl-α-aminocaproic acid; dl-glycoleucine; dl-2-aminohexoic acid) $CH_3(CH_2)_3CH(NH_2)COOH$; m.w. 131.11; shiny leaf.
l-norleucine (l-α-aminocaproic acid; l-2-aminohexanoic acid; l-glycoleucine). $CH_3(CH_2)_3CH(NH_2)COOH$; m.w. 131.11; leaf. f.w.
norm. In ceramics, an expression of chemical composition in terms of the mineral molecules present or assumed to be present.
normal. Having a straight chain structure, as normal butane, H_3C—CH_2—CH_2—CH_3; standard, as conditions of temperature and pressure; containing one equivalent weight of a solute in one liter of solution, e.g. 1N HCl contains 36.5 g. per liter.; in reference to salts, one in which all of the hydrogens of the corresponding acid are replaced by cations and, similarly, all the hydroxyls of the corresponding base by negative groups (anions), e.g. normal sodium phosphate, Na_3PO_4.
normal compound. See normal.
normal electrode. Metallic electrode in a normal solution of an electrolyte containing ions of the same metal.
normal phosphate. See phosphate, tertiary.
normal potential (electrolytic potential). The potential value for an ionic concentration of 1.
normal solution. A solution containing one equivalent (q.v.) of solute per liter of solution.
normal temperature and pressure (N.T.P.). 0° C. and 760 mm.; standard temperature and pressure.
normal term. Spectral term whose fine structure level of smallest inner quantum number is farthest down on energy-level diagram.

normalization. Process of multiplying a given characteristic wave function by a constant so that the volume integral of the wave function equals 1.
normalizing. Annealing process in which steel is heated above the critical temperature and cooled in the air outside the furnace.
normenthane. See cyclohexane, isopropyl-.
3-nortropanol, 8-methyl-. See tropine.
nosean. See noselite.
noselite (nosean). A mineral, $5Na_2O \cdot 3Al_2O_3 \cdot 6SiO_2 \cdot 2SO_3$; cub., grayish, blsh., brnsh.; sp.gr. 2.25-2.4; hardness 5.5.
nosophen. See phenolphthalein, 3′, 3″, 5′, 5″-tetraiodo-.
notation. The use of symbols to indicate chemical composition.
noumeite. See garnierite.
novaculite. Fine-grained quartzose rock, used as an abrasive.
novarsenobenzol-billon. See neoarsphenamine.
novatophan. See quinoline, 6-methyl-2-phenyl-4-carboxylic ethyl ester.
Novemol. Sulfonated terpene alcohols, used as wetting agent.
novocain. See procaine, hydrochloride.
Novolak. A phenol-aldehyde resin which is permanently fusible and soluble; result of acid condensation; used as a shellac substitute.
Novonacco. A modified sodium alkyl naphthalene sulfonate used as a wetting agent in the textile industry.
Novotext. Synthetic tar-acid resin.
Nuba. Thermoplastic coal tar pitch; m.p. 80-150° C.
Nuchar. Activated carbon; used in decolorizing and deodorizing.
nucin. See juglone.
nuclear charge. A charge of an element equal to its atomic number; number of free protons in the nucleus.
nuclease. Enzyme which hydrolyzes nucleic acids.
nuclear sap. Substance inside the nucleus of a cell, in which chromosomes lie.
nucleation. Condensation or aggregation on ions or other particles.
nucleic acid. Substance derived from nucleoproteins (q.v.), consisting of four mononucleotides, each containing a different organic base.
nuclein (nucleoprotein). Conjugated protein which yields nucleic acid on hydrolysis.
nucleinic acid. Compound derived from animals and yeast; yel., green. wh. -wh.; s.w.; used in medicine.
nucleo protein. See nuclein.
nucleoside. Compound containing sugars in a glucosidic union; the substances linked to the sugars being nuclein bases, e.g. ribosides.
nucleotide. A phosphoric ester of the nucleosides, e.g. isosinic acid.
nucleus. In biology, the dense, usually spherical, mass lying within the cell, a structure holding the key to the growth and reproduction of the cell.
nucleus, atomic. The core of the atom, consisting of protons and neutrons, hence of positive charge; the seat of the effective mass of the atom, and the part which attracts and controls the motion of orbital electrons.
Nujol. Heavy paraffin oil; used in paint, medicine.
nulliton. See neutrino.
Nulomoline. Solution of partly inverted sugars; sp.gr. 1.4; a glycerol substitute.
number, characteristic. See eigen value.
number, imaginary. Indicated even root of a negative number, e.g. $\sqrt{-4}$.
number, incommensurable. Number whose value can not be determined absolutely, e.g. $\sqrt{3}$.
number, natural. See positive integer.
number, ordinal. See ordinal number.
number, prime. See prime number.
number, rational. See rational number.
numerical aperture. Refractive index of medium in front of microscope objective multiplied by sine of one half of angle of cone of rays entering objective.
Nuodex. Metallic naphthenate paint drier.
nut galls. Excrescences induced on various kinds of oak trees by insects, containing tannin and used in the tanning and ink industries.
nutmeg oil. See oil, nutmeg.
nutritive ratio. Proportion between protein or muscle building substances, and the heat and energy producers in foods.
nux vomica (Quaker buttons; poison nut; dog button; vomit nut). Dried ripe seed of strychnos n. v.; used in medicine, source of strychnine and brucine.
Nylon. Artificial fiber; a polyamide having a protein-like structure.
N.W. acid. Nevile & Winther's acid.

O

O series. Series of frequencies in x-ray elemental spectrum due to transition of electrons from different higher quantum states to state of principal quantum number 5.

oak extract. Extract of the oak bark, containing tannin; used in the tanning industry.

oak moss resin (mousse de chêne). An oleoresin obtained from lichens; used as a fixative in perfumery.

objective gloss. See gloss, specular.

obscuration. Covering power of an opaque finishing material, such as paint.

obsidian. Glass-like variety of lava, black when seen in bulk, colorless or yellow in thin section; composed of silicates of aluminum, magnesium, sodium and potassium; used for ornamental purposes.

obtuse angle. An angle greater than 90°.

occlusion. See sorption and adsorption.

Ocenol. Technical oleyl alcohol.

ochers (ochres). Native earthy mixtures of metallic oxides and clay; yel., br., r.; used as pigments in paints, in paper-making, etc.

ocimene (3, 7-dimethyl-1, 3, 6-octatriene [one form]). $(CH_3)_2C{:}CHCH_2{-}CH{:}C(CH_3)CH{:}CH_2$; m.w. 136.12; liq.; b.p. 176-8.

9, 12-octadecadienoic acid. See eleostearic acid.

9, 13-octadecadienoic acid. See eleomargaric acid.

octadecanal. See stearaldehyde.

octadecanamide. See stearamide.

octadecane (n-octadecane). $CH_3(CH_2)_{16}CH_3$; m.w. 254.30; cr. f. al.; m.p. 28; b.p. 317; i.w.; s.al.

octadecanenitrile. See stearonitrile.

octadecanoic acid. See stearic acid.

octadecanoic anhydride. See stearic anhydride.

1-octadecanol (n-octadecyl alcohol). $CH_3(CH_2)_{16}CH_2OH$; m.w. 270.30; leaf. f.al.; m.p. 59; b.p. 210.5 [15]; i.w.; s.al.

octadecanoyl chloride. See steary chloride.

9, 12, 15-octadecatrienoic acid. See α-linoleic acid.

9-octadecenamide. See oleamide.

9-octadecenoic acid. See elaidic acid; oleic acid.

9-octadecenoic acid, 12-hydroxy-. See ricinoleic acid.

n-octadecyl alcohol. See 1-octadecanol.

n-octadecylic acid. See stearic acid.

octadecyl sulfate (di-n-octadecyl sulfate). $[CH_3(CH_2)_{17}]_2SO_4$; m.w. 602.64; m.p. 70.2-0.7.

9-octadecynoic acid. See stearolic acid.

octadiene. See conylene.

2, 7-octadiene, 2-methyl-6-methylene-. See myrcene.

2, 6 (and 2, 7)-octadienoic acid, 3, 7-dimethyl-. See geranic acid.

1, 6-octadien-3-ol, 3, 7-dimethyl-. See linaloöl.

octahedrite. See anatase.

octamethylene glycol. See 1, 8-octanediol.

octanal. See caprylaldehyde.

octanamide. See caprylamide.

octane (n-octane). $CH_3(CH_2)_6CH_3$; m.w. 114.14; col. liq.; m.p. −56.5; b.p. 125.8; s.al.

octane, 1-amino-. See octylamine.

octane, 2-amino-. See heptylamine, methyl-.

octane, 1-bromo- (n-octyl bromide). $CH_3(CH_2)_6CH_2Br$; m.w. 193.05; liq.; m.p. −55; b.p. 202-3; i.w.; s.al.

octane, 2-bromo-(l) (l-sec-n-octyl bromide). $CH_3CHBr(CH_2)_5CH_3$; m.w. 193.05; liq.; b.p. 191; i.w.; s.al.

octane, 2-chloro- (sec-octyl chloride). $CH_3(CH_2)_5CHClCH_3$; m.w. 148.59; liq.; b.p. 173; i.w.; s.al.

octane, 1-chloro- (n-octyl chloride). $CH_3(CH_2)_6CH_2Cl$; m.w. 148.59; liq.; b.p. 184.6; i.w.; s.al.

1, 1-octanedicarboxylic acid. See malonic acid, heptyl-.

octane, 2, 7-dimethyl- (biisoamyl). $(CH_3)_2CH(CH_2)_4CH(CH_3)_2$; m.w. 142.17; liq.; m.p. −52.5; b.p. 160; s.w.; s.al.

octanedioic acid. See suberic acid.

1, 8-octanediol (octamethylene glycol). $CH_2OH(CH_2)_6CH_2OH$; m.w. 146.14; need.; m.p. 63; b.p. 172 [20]; s.w.; s.al.

4, 5-octanediol (octylene glycol [one form]). $[CH_3(CH_2)_2CHOH]_2$; m.w. 146.14; (α) liq.; b.p. 112-5 [10]; i.w. (β) m.p. 123-4; b.p. 115-8; i.w.; s.al.

octane, 1-ethoxy-. See ether, ethyl octyl.

octane, 1-iodo- (prim-n-octyl iodide). $CH_3(CH_2)_7I$; m.w. 240.05; liq.; m.p. −45.9; b.p. 255.5; i.w.; s.al.

octane, 3-methyl-, (d)- (d-amylethylmethylmethane). $CH_3CH_2CH(CH_3)(CH_2)_4CH_3$; m.w. 128.16; col. liq.; b.p. 142-3; i.w.; i.al.

octanenitrile. See caprylonitrile.

octane, 1-octyloxy-. See octyl ether.

octane, 1-phenoxy-. See ether, octyl phenyl.

octanoic acid. See caprylic acid.

octanoic anhydride. See caprylic anhydride.

1-octanol (heptyl carbinol; pri-n-octyl alcohol; capryl alcohol, caprylic alcohol). $CH_3(CH_2)_6CH_2OH$; m.w. 130.14; col. liq.; sp.gr. 0.825; m.p. −16.3; b.p. 194; s.w., s.al.; a powerful anti-foaming agent; solvent; perfume ingredient.

2-octanol (methylhexylcarbinol; sec-n-octyl alcohol). $CH_3CHOH(CH_2)_5CH_3$; m.w. 130.14; col. oily liq.; m.p. −38.6; b.p. 178.5; i.w.; s.al.

1-octanol, acetate (n-octyl acetate). $CH_3COO(CH_2)_7CH_3$; m.w. 172.16; col. liq.; m.p. −38.5; b.p. 210; i.w.; s.al.

1-octanol, 3, 7-dimethyl-(l) tetrahydrogeraniol). $(CH_3)_2CH(CH_2)_3CH(CH_3)CH_2CH_2OH$; m.w. 158.17; liq.; b.p. 221-3; i.w.; s.al.

3-octanol, 3-ethyl- (amyldiethylcarbinol; tertdecyl alcohol). $(C_2H_5)_2COH(CH_2)_4CH_3$; m.w. 158.17; col. oil.; b.p. 199; i.w.; s.al.

2-octanol, 2-methyl- (hexyldimethylcarbinol). $(CH_3)_2COH(CH_2)_5CH_3$; m.w. 144.16; liq.; b.p. 178; i.w.; s.al.

1-octanol, nitrate. See octyl nitrate.

1-octanol, nitrite. See octyl nitrite.

2-octanone (hexylmethyl ketone). $CH_3COC_6H_{13}$; m.w. 128.12; col. liq.; m.p. −20.9; b.p. 173.5; i.w.; s.al.

3-octanone (amyl ethyl ketone). $C_2H_5CO(CH_2)_4CH_3$; m.w. 128.12; col. liq.; b.p. 168; i.w.; s.al.

octanoyl chloride. See caprylyl chloride.

1, 3, 6-octatriene, 3, 7-dimethyl-. See ocimene.

6-octen-1-ol, 3, 7-dimethyl-. See rhodinol.

octet rule. The maximum number of valency electrons which can be associated with an atom in stable chemical compounds is eight.

1-octine. See 1-octyne.

n-octoic acid. See caprylic acid.

n-octoic anhydride. See caprylic anhydride.

octupole. Two equal quadrupoles in parallel planes but with corresponding charges reversed.

ocular. Eye-piece of a microscope or other optical instrument.

n-octyl acetate. See 1-octanol, acetate.

pri-n-octyl alcohol. See 1-octanol.

sec-n-octyl alcohol. See 2-octanol.

n-octyl aldehyde. See caprylaldehyde.

octylamine (1-aminoöctane; pri-n-octylamine). $CH_3(CH_2)_6CH_2NH_2$; m.w. 129.16; col. liq.; b.p. 180; s.w.; s.al.

sec-n-octylamine. See heptylamine, α-methyl-.

n-octyl bromide. See octane, 1-bromo-.

sec-n-octyl bromide. See octane, 2-bromo-.

n-octyl chloride. See octane, 1-chloro-.

sec-n-octyl chloride. See octane, 2-chloro-.

n-octyl cyanide. See pelargononitrile.

octylene (caprylene). C_8H_{16}; m.w. 112.12; col. liq.; m.p. 104; b.p. 123; i.w.; s.al.

octylene glycol. See 4, 5-octanediol.

octyl ether (1-octyloxyoctane; di-n-octyl ether). $(C_8H_{17})_2O$; m.w. 242.27; liq.; b.p. 291.8; s.w.; s.al.

octylic. See octyl.

n-octylic acid. See caprylic acid.

pri-n-octyl iodide. See octane, 1-iodo-.

octyl nitrate (n-octyl nitrate). $CH_3(CH_2)_7NO_3$; m.w. 175.14; liq.; b.p. 110-2 [20].

octyl nitrite (n-octyl nitrite). $CH_3(CH_2)_7ONO$; m.w. 159.14; grn. liq.; b.p. 174-5.

n-octylstearamide. See stearamide, n-octyl-.

octyl sulfate (di-n-octyl sulfate). $[CH_3(CH_2)_7]_2SO_4$; m.w. 322.33; m.p. 20.3; b.p. 166.1 [3].

1-octyne (1-octine; n-hexylacetylene; caprylidene). $CH{:}C(CH_2)_5CH_3$; m.w. 110.11; col. liq.; b.p. 125; i.w.; s.al.

2-octynoic acid, methyl ester ("methyl heptinecarbonate"). $CH_3(CH_2)_4C{:}{-}CCOOCH_3$; m.w. 154.11; b.p. 107 [20]; i.w.

odd electron linkage. See singlet linkage.

odiometer. Instrument for measuring dissolved oxygen consumed by sewage per hour.

oenanth-. See enanth-.

oenanthic acid. See enanthic acid.

oenanthic ether. See heptyl ether.

oenanthol. See n-heptylic aldehyde.

oenanthol. See n-heptylic aldehyde.

oersted, absolute. Unit of electrical reluctance equal to 1 electromagnetic c.g.s. unit.

oestrane. Saturated hydrocarbon related to oestrone.

ohm. Electrical unit of resistance thru which a difference in potential of 1 volt will produce a current of 1 ampere; equal to 1.1×10^{-12} electrostatic c.g.s. unit; 1×10^9 electromagnetic c.g.s. units.

oikophilic. Pertaining to a class of bacteria that grow best at 20° C.

oil. General term for a water-insoluble viscid liquid.

oil, amber. A mixture of terpenes obtained by the destructive distillation of amber.

oil, ambrosia. A red oil used in perfumery, distilled from the seed of chinopodium ambrosioides.

oil, angelica. An essential oil distilled from the roots of the angelica plant used in medicine.

oil, aniline. See aniline.

oil, anise. The essential oil of aniseed from which it is obtained by distillation with water.

oil, anthracene. A heavy oil; sp.gr. above about 1.080 at 15.5/15.5; usually distilled from horizontal retort tar or coke oven tar.

oil, artificial mustard. See isothiocyanic acid, allyl ester.

oil absorption. Minimum amount of pure raw linseed oil necessary to wet completely 100 g. of pigment.

oil, acetone. Light yel. to br. oily liq; sp.gr. 0.81-0.87; b.p. 75-125; derived from wood distillation; used in solvents, artificial leather mfr, lacquers, denaturant.

oil, allspice (pimento oil; pimenta oil). Oil obtained from fruit of p. officinalis; sp.gr. 1.02-1.06; y.-br.; medicine flavor.

oil, almond. The oil expressed chiefly from amygdulus communis; the oil from both the sweet and bitter almonds contain olein and are practically identical.

oil, aniline. See aniline.

oil, apopino. See oil, shiv.

oil, arachis. See oil, peanut.

oil asphalt. Asphalt obtained from petroleum.

oil, avocado. An oil obtained from a Brazilian pear, used for soapmaking.

oil, Babassu. An oil derived from a Brazilian nut.

oil, babulum. See oil, neatsfoot.

oil, basil. A yellow, aromatic, essential oil used in medicine and as a flavoring agent.

oil, bay. See oil, laurel.

oil, bean. See oil, soybean.

oil, beni. See oil, sesame.

oil, bergamot. An essential oil expressed from the peel of the fresh, unripe fruit of citrus bergamia. It consists chiefly of linalool, linalyl acetate, limonene and terpineol.

oil, betula. The volatile oil obtained by distillation of the bark and twigs of certain species of birch trees. It consists chiefly of methyl salicylate and is used as a flavoring agent.

oil, birch. An oil obtained by the distillation of birch-tar, consisting of phenols, guaiacol, cresol, and xylenol. It is used in medicine and as a disinfectant.

oil, bitter almond. An essential oil obtained from bitter almonds; sp.gr. 1.05-1.06; m.p. 13-14; b.p. 180; s.w.; i.al.; contains chiefly benzaldehyde, hydrocyanic acid, and benzaldehyde cyanhydrin; used in mfr. soaps, toilet articles, in medicine.

oil, bitter orange-flower. See oil neroli.

oil, blown. Oil thickened by blowing air thru it, e.g. blown castor oil.

oil, blown castor (oxidised castor oil)

OIL

An oil obtained by blowing air thru castor oil.

oil, blubber. See oil, whale.

oil, bodied. Drying oil which has been treated to increase its drying speed.

oil, boiled. Linseed oil which has been thickened by heat and oxygen absorption by heating to about 150° C. with driers, resulting in a paler color and faster drying properties.

oil, bone (Dippel's oil). An oil obtained by the dry distillation of bones.

oil, cade. An oil obtained from the juniper tree and used in medicine.

oil cake. The seed material left after oil has been extracted; used as fertiliser and fodder.

oil, calamintha. See oil, marjoram.

oil, camphor. An oil obtained from camphor wood; col. liq.; sp. 0.870 to 1.040; i.al.; used in soaps, perfumery, lubricating oils; substitute for turpentine in varnishes, in medicine.

oil, cananga. See oil, ylang ylang.

oil, candle nut. An oil obtained from the fruits of the candleberry tree, used in the soap industry and in the paint industry as a substitute for linseed oil.

oil, caraway. An oil obtained from the caraway seed, used in medicine and as a flavoring agent. Its chief components are carvone and d-limonene.

oil, carbolic (middle oil). A fraction distilling substantially between 190° and 235° C., obtained from high temperature coal tar and containing commercial quantities of phenols and frequently of naphthalene.

oil, cardamom. An essential oil obtained from certain plants growing in Ceylon, Siam, etc., consisting chiefly of terpenes and used in medicine and for flavoring purposes.

oil, cashew nut. An oil expressed from the cashew nut and used in medicine.

oil, cassia. An oil obtained from the Chinese cinnamon tree, consisting chiefly of cinnamic aldehyde; yel. to br. liq.; sp.gr. 1.045 to 1.063; b.p. 240-260; i.al.; used in perfumery, flavoring, medicine.

oil, castor. A yel. to yel. br. oil obtained by pressing the seeds of the castor plant, Ricinus communis; sp.gr. 0.960-0.970; solidifies at −10; s.al.; used in mfr. Turkey red oil, fly oils, cosmetics, soaps, lubricating, leather treatment and in medicine.

oil, cayenne. See oil, linaloe.

oil, cedar leaf. An essential oil containing terpenes and used in medicine.

oil, cedar wood. An essential oil containing cedrene and used in medicine and perfumery.

oil, celery. An essential oil having the odor and taste of celery, used in medicine and for flavoring.

oil, chaulmoogra. An essential oil used in the treatment of leprosy.

oil, cherry kernel. An oil obtained from cherry kernels, and used for soapmaking.

oil, China. See Peru balsam.

oil, China wood. A yellow oil obtained from Chinese seeds used in the manufacture of quick-drying varnishes, consisting chiefly of the glycerides of oleic and oleomargaric acids.

oil, Chinese. See oil, cassia.

oil, Chinese bean. See oil, soybean.

oil, cinnamon. An oil distilled from the bark of a tree native to Ceylon, consisting chiefly of cinnamic aldehyde and terpenes, and used in medicine, perfumery, and flavoring.

oil, cinnamon leaf. An oil distilled from the leaves of a tree native to Ceylon, consisting chiefly of eugenol and safrole, and used in medicine, perfumery, and flavoring.

oil, citronella. An oil obtained from fresh grass grown in Asia, consisting chiefly of geraniol and citronellal, and used in cheap soap perfumery.

oil, cloves. Pale yellow volatile liquid obtained from flowers of Eugenia aromatica; sp.gr. 1.048-1.070; b.p. 250-260; i.al.; used in manufacture of perfumes, cosmetics, eugenol, as flavoring agent, in silvering mirrors; in medicine.

oil, cocoanut (coconut butter). Wh. amorp. semi-solid; sp.gr. 0.9115; m.p. 20-28; i.al.; used in manufacture of edible fats, food preparations, margarine, cosmetics, candles, ointment base, and in medicine.

oil, cod. A poorer quality cod-liver oil used mostly by tanners; see also oil, rosin.

oil, cod liver. Yellow-brown oil obtained from the liver of the cod; sp.gr. 0.922-0.930; i.al.; used in medicine, as an adulterant of linseed oil and in the tanning and curing of leather.

oil, colza. See oil, rapeseed.

oil, copahyba. See copaiba balsam.

oil, core. Oil compound having specific properties for use in making foundry cores.

oil, coriander. An essential oil, derived from a European fruit, consisting chiefly of d-linaloöl and d-pinene, having a spicy taste and used as a flavoring agent.

oil, corn. Pale yellow fatty acid obtained from the endosperm of corn kernels; sp.gr. 0.920-0.925; m.p. −17 to 23; used in preparing food, in leather finishing, lubricating and in making oleomargarine, paints and soaps.

oil, creosote. See creosote and oil, heavy.

oil, crude. See petroleum.

oil, cubeb. An essential oil containing dipentene, l-pinene and other terpenes, used in medicine.

oil, cumin. An essential oil, containing cumene and cumaldehyde, used in medicine, perfumery and flavoring.

oil, croton. A brownish-yellow oil, composed of the glycerides of stearic, palmitic, oleic, and volatile acids, used in medicine as a very powerful purgative.

oil, cutting. Animal, vegetable, mineral or mixed oils free from water and soap used to facilitate cutting of metals; see also oil, soluble.

oil-dag. Colloidal suspension of graphite in oil; a lubricant. See dag.

oil, dead. See creosote and oil, heavy.

oil, diesel. Gas oil or solar oil, the product distilled over after the kerosene from petroleum, used for high speed diesel engines.

oil, dill. An essential oil containing carvone and limonene; used in perfumery and as a flavoring agent.

oil, Dippel's. See oil, bone.

oil, dog-fish. See oil, shark.

oil, douglas-fir. See oil, pine needle.

oil, earth. See petroleum.

oil, earth nut. See oil, peanut.

oil, edible. Oil which serves as food, e.g. olive oil.

oil, egg yolk. Oil obtained from undecomposed yellow of eggs; b.p. 136; used in food products, etc.

oil, erigeron. An oil containing d-limonene and terpineol, used in medicine.

oil, essential (volatile oil). Oily substance having marked characteristic odors, occurring in fruits, flowers, leaves, stems, etc., e.g. lavender oil; complex mixtures chiefly of terpenes, and their oxygen derivatives.

oil, estragon. An essential oil, containing methyl chavicol, used as a flavoring agent.

oil, fennel. A colorless or pale yellow essential oil distilled from the fruit of the common fennel; used in medicine, perfumery and liqueurs.

oil, firewood. See oil, pine needle.

oil, fish. Non-drying oils obtained from all parts of the common fish species.

oil, fixed. An oil which cannot be distilled without decomposition and does not evaporate under ordinary conditions, derived from animals, vegetables, or fishes by pressing or extracting.

oil, flatting. Oil composition used in paints to give dull finish.

oil, Florence. See oil, olive.

oil, flotation. Oil, such as creosote oils or eucalyptus oil, used to "wet" a particular component of a powdered ore and cause it to concentrate in an airy froth, e.g. concentration of zinc sulfide in its ores.

oil, flux. An oil obtained from asphalt-base petroleum and used to flux natural asphalts.

oil, French almond. See oil, apricot kernel.

oil, French fat. Oil of turpentine used in ceramic glazing.

oil, fuel. Any petroleum liquid product used for combustion, usually a distillation fraction.

oil, fusel. A colorless oily liquid obtained as a by-product in the alcoholic fermentation of sugars; contains chiefly iso-amyl alcohol and normal amyl alcohol; sp.gr. 0.814; b.p. 130; s.w.; s.al.; used in preparation of lacquers and in varnish making, in pharmaceuticals, and as a solvent for resins and waxes.

oil, garlic. A yellowish liquid with a penetrating odor distilled from the Allium sativum, used in flavoring and medicine.

oil gas (blau gas, pintsch gas). Gas formed by oil decomposition; used for heating and lighting; containing volatile hydrocarbons, hydrogen, and methane.

oil, gaultheria. Oil of wintergreen or methyl salicylate, used in flavoring compounds, medicine and perfumery.

oil, geranium. A pale yellow or greenish liquid, having geraniol as its main constituent, distilled from the Pelargonium radula, P. capitatum and P. odoratissimum.

oil, germ process. Mineral lubricating oil containing small amounts of free fatty acids for lowering surface tension.

oil, gingelly. See oil, sesame.

oil, gloss. A poor varnish made by dissolving rosin in benzine.

oil, graminis citrati. See oil, lemon grass.

oil, grape seed (grape-stone oil, wine-stones oil, raisin-seed oil). Yellow fixed oil, extracted from the seed of the grape vitis vinifera; sp.gr. 0.92-0.935; m.p. 24; b.p. 94-96.5; pleasant odor and taste which turns bitter on standing; used as a fuel, food, lubricant, and in soap.

oil, grape-stone. See oil, grape seed.

oil, green. A coal tar creosote oil distillate containing anthracene, chrysene, carbasole, etc.

oil, grinding. Linseed or other drying oil used in grinding white lead or other pigments.

oil, ground nut. See oil, peanut.

oil, Haarlem (linseed oil, sulfurated and terebinthinated; Dutch drops). Brownish red oil used as an antiseptic; i.w.; made by mixing sulfurated linseed oil with oil of turpentine.

oil, halibut. A pale yellow to dark red liquid obtained from halibut livers; s.al.; used in leather dressing.

oil, Hansa. Polymerised marine animal oil used in soap making.

oil, hardened. Oil hardened by hydrogenation (q.v.).

oil, heavy (dead oil, creosote oil, medium oil). A high boiling creosote oil obtained from coal tar and distilling above about 270° C.

oil, hempseed. Light green liq.; sp.gr. 0.9255-0.9280; used in manufacture of soft soaps, paints, varnishes.

oil, herring. Pale yellow to dark red liquid derived from herring; sp.gr. 0.92-0.93; m.p. 30-31.5; iodine value 130-142; used in soap, finishing, lubricating.

oil, hoof. See oil, neatsfoot.

oil, hydnocarpus (h. anthelmintica oil). Glycerides of chaulmoogric and hydnocarpus acids, etc.; sp.gr. 9.5; m.p. 20-23.

oil, Indian geranium. See oil, palmarosa.

oil, Indian grass. See oil, palmarosa.

oil, katchung. See oil, peanut.

oil, lard. Substance containing olein and small percentage of glycerides of solid fatty acids; col. or yel. semi-solid; sp.gr. 0.915; s.al.; used as lubricant, illuminant, for soap and food preparations.

oil, laurel (bay oil). Essential oil distilled from berries and leaves of l. nobilis; sp.gr. 0.915-0.936; bright yellow liq.; s.al.; containing eugenol, methyl eugenol, chavicol and methyl chavicol; used in medicine.

oil, lavender (spike oil). Essential oil distilled from lavandula spica; sp.gr. 0.90-0.92; yellow; contains camphor, borneol, camphene, cineole, linalool, geraniol; liniments; medicine.

oil, lemon (limonis oil). An oil containing citral, limonene, phellandrene, optically active pinene, etc.; sp.gr. 0.854-0.861; pale yellow; a flavor, perfume and polish.

oil, lemon grass (verbena oil, East Indian; graminis citrati oil). A yellow oil containing citral; sp.gr. 0.895-0.905; s.al.; food extracts, perfumery.

oil length. Gallons of oil per 100 lb. of resin in a varnish.

oil, light. A crude fraction distilled from high temperature coal tar containing commercial quantities of aromatic hydrocarbons which distil below about 190° C.; phenols and bases are usually present.

oil, lime (limette oil). Oil from citrus medica, var., acida; s.g. 0.860-0.901; yel.; used as a flavor, and in perfume and soap making.

oil, limette. See oil, lime.

oil, limonis. See oil, lemon.

oil, linaloe (cayenne linaloe oil). Oil containing linalool, geraniol, terpineol; sp.gr. 0.870-0.880; s.al.; used in perfumery.

oil, linseed. A yellow to brown liquid pressed from seeds of the flax plant; sp.gr. 0.9316-0.9354; i.al.; used in manufacture of paints, varnishes, lacquers, cements, soft soaps, printing and lithographing inks, furniture polishes, boiled oil, silk thread coating and in medicine.

oil, long. A varnish containing a high ratio of oil to resin, usually more than 25 gallons oil to 100 lb. resin.

oil, luccu. See oil, olive.

oil, lumbang. See oil, candle nut.

oil, mace (ex arillus of nutmeg). Colorless or pale yellow liquid derived from fruit of Myristica fragens, containing camphene, terpineol, dipentene, etc.; sp.gr. 0.91-0.93; s.al.; used as a flavor and perfume.

oil, maize. See oil, corn.

oil, male fern. Colorless to pale yellow liquid distilled from rhizome of dryopteris filix-mas marginalis, containing hexyl and octyl esters of fatty acids; sp.gr. 0.850; b.p. 140-250; medicine, liquor.

oil, mandarin (tangerine oil). Extract from mandarin orange peel containing limonene, methyl esters of anthranilic acid, etc.; sp.gr. 0.854-0.859; s.al.; used as a flavor and in medicine.

oil, marjoram (calamintha oil). Colorless, yellow or greenish-yellow oil distilled from the marjoram; sp.gr. 0.890-0.910; used to obtain terpineol and terpenes and in medicine and perfumery.

oil, medium. See oil, heavy.

oil, menhaden (pogy oil; mossbunker oil). Oil extracted from menhaden fish; sp.gr. 0.927-0.933; m.p. 38.5-47; used as a linseed oil substitute and as a waterproofing agent; in making fats by hydrogenation and in leather manufacture.

oil, middle. See oil, carbolic.

oil, mineral (liquid paraffin). Mixture of liquid hydrocarbons obtained from petroleum; colorless, transparent liq.; sp.gr. 0.828-0.905 (25°). b.p. above 360; i.w.; i.al.; used in paints, varnishes, lacquers, medicine, sprays, and as a solvent. Also see petroleum.

oil, mineral seal. Distillate between kerosene and gas oil proper.

oil, mirbane. See nitrobenzene.

oil, miscible. See oil, soluble.

oil, monople. See oil, castor, sulfonated.

oil, monopol. See oil, castor, sulfonated.

oil, mossbunker. See oil, menhaden.

oil, mowra. Yellow semifluid fat obtained from bassia lalifolia seeds; sp.gr. 0.894-0.898; m.p. 23-29; used in soap manufacture.

oil, mustard. See the different esters of isothiocyanic acid.

oil, mustard, artificial. See isothiocyanic acid, allyl ester.

oil, myristica. See oil, nutmeg.

oil, myrtle. Light yellow to greenish-yellow oil obtained from leaves of m. communis; sp.gr. 0.896-0.92; used in medicine and perfumery.

oil, neatsfoot (babulum oil, hoof oil). Pale yellow liquid obtained from shinbones and feet of cattle; sp.gr. 0.916; m.p. 28.5-30.8; i.al.; used in leather industry, as general waterproofing agent, and as lubricant.

oil, neroli (bitter orange-flour oil). An oil obtained from fresh flowers of the bitter orange; sp.gr. 0.870-0.881; yel.-br.r.; a perfume and flavoring substance.

oil, niobe. See benzoic acid, methyl ester.

oil, non-drying. An oil whose film does not become hard or gummy on exposure to air, e.g. olive oil.

oil, nutmeg (myristica oil). An oil distilled from nutmegs (myristica fragans); sp.gr. 0.865-0.930; col.-yel.; s.al.; used in medicine, flavoring, and soap.

oil of vitriol. See sulfuric acid.

oil of wintergreen, artificial. See salicylic acid, methyl ester.

oil, oiticica. An oil derived from fruit of Oiticica tree of Brazil; used as a drying oil in paints, varnishes, etc.

oil, oleo. Liquid fatty oil obtained by cold pressing of beef fat.

oil, olive (sweet oil, Florence oil, luccu oil). Yel.-greenish liq., derived from fruit of olea europea; sp.gr. 0.910-0.918; f.p. −6; s.al.; used in manufacture of foods, cosmetics, soaps, lubricants, textiles, leather, etc.

oil, orange. An oil obtained from the peal of fresh oranges, consisting chiefly of dextro-limonene, the chief odorous ingredient being decylic aldehyde.

oil, origanum. See oil, thyme.

oil, orris. Yellow oil obtained from rhizome of iris florentina; m.p. 44-50; containing myristic acid, methyl esters of oleic acid; used in perfume and cosmetics.

oil oxidation number. Number of mg. of asphaltene formed by oxidation and determined by solution of an oil in petroleum spirit and filtration.

oil, palm (palm butter, palm grease). Red-yellow fatty oil from pulp of palm fruit; sp.gr. 0.902-0.947; m.p. 27-42.5; i.al.; used in butter coloring, butter substitutes; in cosmetics, soaps, lubricants, etc.

oil, palm kernel (palm nut oil). Yellow liquid from the nuts of Elaesis guineensis; sp.gr. 0.952; m.p. 26-30; i.al.; used in manufacture of butter substitutes, food preparations, soaps, lubricants, cosmetics and in medicine.

oil, palm nut. See oil, palm kernel.

oil, palmarosa (Indian grass oil; rusa oil; Indian geranium oil; Turkish geranium oil). Oil distilled from cymbopogon martini; col. to yel.; sp.gr. 0.887-0.90; contains geranol, s.al.; used in perfumery.

oil, paraffin. See oil, mineral.

oil, patchouli. An oil distilled from leaves of pogostemon p.; s.g. 0.970-0.995; br.-yel. liq.; used in perfumery.

oil, peach kernel. Oil obtained from peach seeds, prunus persica; sp.gr. 0.915; yel.-red; s.al.; used in food, flavoring, medicine.

oil, peanut (arachis oil, earthnut oil, katchung oil). Pale yellow liquid with nutty odor; from peanuts, Arachis hypogaea.; sp.gr. 0.916-0.922; i.al.; used as salad oil, in food preparations, lubricants, soaps, canning, adulterant of olive oil, leather manufacture, and in medicine.

oil, pennyroyal. Oil obtained from leaves and tops of herbs, mentha pulegium; yel.; sp.gr. 0.93; b.p. 99 [14]; used in medicine and as an insectifuge.

oil, pepper. Steam distillation product of fruit of piper nigrum, containing phellandrene, cadinene and dipentene; yel.-green; sp.gr. 0.87-0.916; s.al.; used in medicine.

oil, peppermint. Colorless to yellow oil distilled from leaves and flowers of peppermint plant, mentha piperita; containing menthol; sp.gr. 0.895-0.921; used in medicine, cosmetics, etc.

oil, perilla. Light yellow liquid obtained from mint seed, perilla ocimoides; sp.gr. 0.932-0.945; i.al.; used in manufacture of paints, varnishes, lacquers, printing and lithographic inks; a linseed oil substitute.

oil, petit-grain (petit-grain citronier oil). An oil distilled from bitter orange tree leaves and unripe fruit; yel.; sp.gr. 0.887-0.900; used in perfumery.

oil, pilchard. See oil, herring.

oil, pimenta. See oil, allspice.

oil, pine. Colorless to yellow liquid from dead Southern pine wood; sp.gr. 0.925-0.942; b.p. 185-225; i.al.; used in manufacture of paints, varnishes, perfume preparations, soaps, disinfectants, detergents, in degumming, deoiling. See also oil, pine needle.

oil, pine-needle (pine oil; firwood oil; douglas-fir oil). Oil obtained from pine and fir needles; used in perfumery and medicine.

oil, pine-tar. See oil, tar.

oil, pistachio. Oil obtained from seeds of pistachio nuts; s.g. 0.918; used in the manufacture of sweetbreads.

oil, pogy. See oil, menhaden.

oil, polymerized. See oil, blown.

oil, poppyseed. See oil, poppy.

oil, poppy (poppyseed oil). Oil obtained from poppy seed; sp.gr. 0.924-0.928; golden yel.; i.al.; used in lubricants, salad oil, colors, olive oil substitutes, varnishes and soaps.

oil, porpoise. Yellow oil obtained from brown porpoise; sp.gr. 0.926; used in lubricants, soaps, etc.

oil, raisin seed. See oil, grape seed.

oil, rape. See oil, rapeseed.

oil, rapeseed (colza oil; rape oil). Oil obtained from rapeseed; br.-yel. liq.; sp.gr. 0.913-0.917; m.p. 17-22; i.al.; used in lubricating compositions, soaps and as an illuminant and a quenching oil in tempering steel.

oil-reactive resin. See resin, oil-soluble.

oil, red. See oleic acid.

oil-resin ratio, critical. Ratio of oil to resin at which there is a significant change in some property.

oil, rhodium. An essential oil having rose-like odor.

oil, road. Liquid and semi-liquid crude oil residue.

oil, rock. See petroleum.

oil, rose, synthetic. Combinations of true rose oil, citronellol, geraniol, etc.

oil, rosemary. Oil distilled from leaves of r. officinalis; yel.; sp.gr. 0.894-0.920; used in medicine and perfumery.

oil, rosin (retinol, rosinol, cod oil). Colorless to brown viscous liq.; sp.gr. 0.980-1.110; b.p. 280; i.al.; lubricant and adulterant for boiled linseed oil and used in printing inks.

oil, rubber seed. Oil obtained from seed of para rubber tree; sp.gr. 0.925-0.93; used in soaps and as a linseed oil substitute.

oil, rubbing. Neutral mineral oil used with abrasive for rubbing dried finishing coatings.

oil, rue. Distillation product of garden rue herb; yel. to greenish viol. liq.; sp.gr. 0.83-0.84; b.p. 215-232; i.al.; used in manufacture of organic chemicals, and in medicine.

oil, rusa. See oil, palmarosa.

oil, sage. Essential oil obtained from leaves of salvia officinalis; sp.gr. 0.910-0.930.

oil, salad. Any edible oil used in salads.

oil, salmon. A golden-yellow liquid obtained from salmon; sp.gr. 0.9258; i.al.; used in soaps and leather dressings and as a lubricant.

oil, sandalwood (santalwood oil). Oil obtained from steam distillation of sandalwood; yel.; sp.gr. 0.974-0.985; used in medicine and perfumery.

oil, santalwood. See oil, sandalwood.

oil, sardine. Amber to greenish-brown liquid; sp.gr. 0.928-0.993; m.p. 28-36; i.al.; soaps, tanning leather; lubricant.

oil, sassafras. Oil distilled from the bark of s. officinalis, yel-red. yel.; sp.gr. 1.065-1.095; used as a flavor and in medicine.

oil, semi-drying. Oil which absorbs some oxygen and becomes gummy but not hard, e.g. cottonseed oil.

oil, sesame (beni oil, gingelly oil, teal oil). Yellow liquid pressed from sesame indicum; sp.gr. 0.921-0.924; m.p. 26-32; used in manufacture of food products, as a substitute for olive and almond oil and as a lubricant.

oil, shale. Oil obtained from shale; dark gr.-br.; sp.gr. 0.86-0.96.

oil, shark (dog-fish oil). Oil obtained from the dog-fish liver; sp.gr. 0.92; yel-r.br.; used in soaps and paints; also see oil, shark liver.

oil, shark liver. Oil obtained from shark liver; red. yel. to light brown liq.; sp.gr. 0.91-0.93; used as a leather dressing and cod-liver oil adulterant, and in paints and soft soaps.

oil, shiv (apopino oil). A Japanese essential oil with a high linalool content; sp.gr. 0.87-0.89; s.al.

oil, skunk. Sp.gr. 0.9166; used in manufacture of soaps and lubricants.

oil, slushing. See slushing compound.

oil, smudge. A petroleum oil which is burnt in fruit orchards to prevent frost injury to the plants.

oil, sod. Product obtained by neutralizing the washings from chamois leathers; used in manufacture of lanolin, and in softening and curing leather.

oil, solar. A gas oil obtained from petroleum of the Gulf or mid-continent field; a Russian oil; very pale yel.; sp.gr. 0.850-0.880; flash point above 80° C.

oil, soluble (miscible oil; cutting oil). An oil or other water insoluble fluid having an emulsifier, with or without an auxiliary solvent dissolved in it, to make it dispersible in water.

oil-soluble, resin. See resin, oil-soluble.

oil, soybean (Chinese bean oil). Oil obtained from soya bean; yel. liq.; sp.gr. 0.922-0.928; m.p. 22-31; i.al.; used in mfr. varnishes, paints, soaps, lithographic ink, linseed oil adulterant and substitute; food.

oil, sperm. Oil obtained from sperm whales; yel. br. liq.; sp.gr. 0.878-0.883; i.al.; used in the manufacture of leather, soaps, lubricants; an illuminating and quenching oil.

oil, spike. See oil, lavender.

oil, spindle. The lightest and most fluid fractions of petroleum oils, used as lubricants.

oil, sulfonated castor. A red oil obtained by sulfonating castor oil, used in the textile and leather industries.

oil, sunflower. Pale yellow liquid obtained from sunflower seeds; s 0.924-0.926; i.al.; used in so illuminant; edible oil.

oil, sweet. See oil, olive.

oil, sweet almond. Yellowish liq.; s 0.92-0.92; m.p. 13-14; s.al.; use mfr. soaps, cosmetics, perfume, li cant, and in medicine.

oil, tallow. Pale yellow liquid; s 0.943-0.946; i.al.; lubricant, dres and finishing agent, detergent; in dyeing and printing calico.

oil, tangerine. See oil, mandarin.

oil, tar (pine-tar oil). Colorless to d red-brown liquid obtained from w tar; sp.gr. 0.862-0.872; used in ma facture of insecticidal and germici compositions and in medicine; mineral flotation oil.

oil, tar-acid. Black liquid; sp.gr. 0.9 1.090; used in wood preservation.

oil, tea-seed. A clear straw-colored yellowish oil obtained by express the seeds of Thea sasanqua, a pl related to the tea plant; used lubricant, illuminant, hair oil.

oil, teal. See oil, sesame.

oil, Teka. Stand oil extract from whi saturated acids, free acids, etc., ha been removed; dries faster a produces a harder film than t untreated stand oils.

oil, tempering. Oil used in temperi metals, e.g. suitable oils are summ black oils and steam-hammer oils.

oil, terpeneless. Essential oil, fro which terpenes have been remov to make it stronger or more solubl

oil, thyme. Essentials oil obtained b distillation from various species the Thymus, containing thymen cymene, linalool and borneol and us in perfumery and flavoring.

oil, train. See oil, whale.

oil, transformer. Mineral oil used transformers for cooling purpose usually possessing a flash point ov 160° C., having little or no volatilit at 100° C. and free from moisture.

oil, tung. See oil, China wood.

oil, Turkey red. See oil, casto sulfonated.

oil, Turkish geranium. See oi palmarosa.

oil, turtle. A yellowish semi-solid o similar to cod-liver oil.

oil, verbena, East Indian. See oi lemon grass.

oil, vetiver (vertivert). A thick yello essential oil distilled from the root of the cuscus grass, used in perfumery

oil, volatile. See oil, essential.

oil, walnut. A pale yellowish-green oi expressed from the seeds of Juglan regia; main constituent is linoli acid; sp.gr. 0.919-0.929; i.al.; use in varnishes and paints.

oil, water soluble. Ammonium, potassi um, or sodium soap of the oleic, sulfo fatty, rosin, or naphthenic acid dissolved in mineral oils, which forms almost clear solutions or perma nent emulsions with water.

oil, whale (train oil). A yellow-brown non-drying fixed oil obtained from the blubber of whales; sp.gr. 0.925-0.930; m.p. 14-2.7; i.al.; used in leather dressing, tempering steel, illuminating, and in oleomargarine and insecticides.

oil, wheat. The oil obtained from bruised wheat.

oil, white. Colorless and odorless refined petroleum oil used in medicine and cosmetics, e.g. Nujol; spindle oils that have been bleached.

oil, white medicinal. Mineral oil that has been treated to remove color, odor and taste.

oil, winestones. See oil, grape seed.

oil, wintergreen. See salicylic acid, methyl ester.

oil, wood. See balsam gurjun.

oil, wool. Oil for treating scoured wool before carding and spinning to lubricate fibers and make them pliable.

oil, wormseed. A yellow essential oil obtained by distillation of unexpanded

flower heads of Artemisia maritima, used in medicine in treatment of hookworm.

, wormwood. An oil obtained from a very bitter herb having medicinal value, containing thujone and used in making absinthe.

l, ylang ylang (Cananga Oil). A yellow essential oil distilled from the flowers of Cananga odorata, possessing a delicate odor and used in perfumery.

l, zedoary. A pale-yellow essential oil with a camphor-like odor, containing cineole, and used in medicine.

lcloth. Fabric formed by coating cloth with a mixture of linseed oil, whiting and pigment, allowing to dry.

iliness. Property of an oil which enables it to give a lower coefficient of friction than would be expected simply from its viscosity.

iticica oil. See oil, oiticica.

ol. Suffix denoting the —OH group in organic compounds, e.g. phenol, C_6H_5OH, and methanol, CH_3OH.

ol complex. Basic complex unreactive to hydrochloric acid.

olation. Any reaction by which basic salt solutions become more resistant to hydrochloric acid.

oldhamite. See calcium sulfide.

oleamide (9-octadecenamide [one form]; oleic acid amide). $C_{17}H_{33}CONH_2$; m.w. 281.28; cr.; m.p. 76; i.w.; s.al.

oleate. Salt of oleic acid, $C_{17}H_{33}COOH$.

olefin. See alkene.

olefinic terpenes. Terpenes (q.v.) of the open chain type with three double bonds, e.g. myrcene, $(CH_3)_2C{:}CH{-}CHCH_2C(CH_2)CH{:}CH_2$.

oleic acid (9-octadecenoic acid [one form]). $C_8H_{17}CH{:}CH(CH_2)_7COOH$; m.w. 282.27; col. need.; m.p. 14; b.p. 286 [100]; i.w.; i.al.; used in manufacture of paint driers, soaps, hair oils, cleaning compositions, in waterproofing textiles and leather tanning.

oleic acid, amyl ester. $C_{17}H_{33}COO{-}C_5H_{11}$; m.w. 352.34; lt. yel.; sp.gr. 0.862 [20]; b.p. 200-240 at 20 mm.

oleic acid, benzyl ester. $C_{17}H_{33}COO{-}CH_2C_6H_5$; m.w. 372.31; b.p. 237 [7]; i.w.; s.al.

oleic acid, butyl ester (butyl 9-octadecenoate [one form]). $C_8H_{17}CH{:}CH{-}C_7H_{14}COOC_4H_9$; m.w. 338.33; liq.; b.p. 180-95 [2]; i.w.; s.al.

oleic acid, diethylene glycol ester. See under diethylene glycol.

oleic acid, ethyl ester. $C_8H_{17}CH{:}CH{-}(CH_2)_7COOC_2H_5$; m.w. 310.30; liq.; b.p. 205-8 [10]; i.w.; s.al.

oleic acid, isoamyl ester. $C_{17}H_{33}COO(CH_2)_2CH(CH_3)_2$; m.w. 352.34; col. liq.; b.p. 223-4 [10]; i.w.; s.al.

oleic acid, methyl ester (methyl oleate). $C_{17}H_{33}COOCH_3$; m.w. 296.28; oil.; b.p. 216-7 [10]; i.w.; s.al.

oleic acid, p-phenylphenacyl ester. $C_{17}H_{33}COOCH_2COC_6H_4C_6H_5$; m.w. 476.34; m.p. 60.5.

olein. See glycerol, trioleate.

oleinase. Enzyme causing oxidative (tallowy) spoilage in milk.

oleine. See oil, castor, sulfonated.

oleo oil. See oil, oleo.

oleofractometer (Jean's). Instrument for comparing refractive powers of oils and fats with a standard.

oleomargarine. Butter substitute, made from coconut oil and/or other fats or oils with milk or cream.

oleometer. Hydrometer used for vegetable and sperm oils; scale of 50°-0° corresponds to sp.gr. 0.870-0.970.

oleoresins. Mixtures of plant resins and essential oils; balsams.

oleum. Fuming sulfuric acid.

oleum spirits. Petroleum solvent; b.p. 15.1-216.7° C.

olfaction. The act, sense, or process of smelling.

olibanum. See frankincense.

oligoclase (lime-soda feldspar). A mineral, $NaAlSi_3O_8 + CaAl_2Si_2O_8$; tricl., wh., gray, grnsh., redsh.; sp.gr. 2.62-2.672; hardness 6-7.

oligodynamic. Pertaining to bactericidal power of very minute traces of metallic ions, e.g. ionized silver.

oligodynamy. See Katadyn process.

-olium. Suffix designating cyclic substances ending with ole containing quinquevalent nitrogen in the ring, e.g. imidazolium.

olive oil. See oil, olive.

olive oil foots. A grade of oil being used under the designation of "sulfur oil." It is a green oil, of high free acid content, otherwise same as olive oil.

olivenite. A mineral, $4CuO \cdot As_2O_5 \cdot H_2O$; rhomb., olv. grn., dk. grn. to br.; sp.gr. 4.1-4.4; hardness 3.

olivine (chrysolite, peridot). A mineral, $(Mg,Fe)_2SiO_4$; rhomb., olv. grn., or grayish grn. to yelsh. br.; sp.gr. 3.26-3.40; hardness 6.5-7.0; used as refractory lining; for floors.

omega value. Value of quantum number referring to combined spin and orbital angular momentum of a molecule.

Ondol. A sulfated higher fatty alcohol of the gardinol type combined with oxygen present as hydrogen peroxide.

-one. Suffix denoting a ketone, e.g. acetone.

onefrite. A mineral; Hg(S,Se); sp.gr. 7.6-8.1; blk.-gr.

-onium. Suffix denoting aliphatics containing quinquevalent nitrogen.

onyx. Colored form of agate.

oölites. Limestones or dolomites composed of small concretions resembling fish roe.

oöspore. A sexual spore of downy mildew.

opacifier. Material which gives opacity to a coating, or increases its opacity.

opacity factor. Ratio between projected area of a particle, measured by a photoelectric cell, and the true projected area.

opal. A mineral, $SiO_2 \cdot xH_2O$; amor., col., wh., yel., br., red, grn.; internally reflecting; sp.gr. 2.1-2.3; hardness 5.5-6.5.

opalwax. Hydrogenated castor oil.

open chain compound. See chain, open.

open system. System which can gain or lose matter, heat or work.

operating pressure. See impact head.

opianic acid (5, 6-dimethoxyphthalaldehydic acid). $(CH_3O)_2C_6H_2(CHO){-}COOH$; m.w. 210.08; need. f.w.; m.p. 150; s.al.

opium. Dried poppy seed juice; having a strong peculiar odor; brown; sp.gr. 1.336; containing not less than 9.5% morphine (U.S.P.), and alkaloids; used in medicine.

opoponax. Oleo-gum resin from stem or root of o. chironium; s.w.

opsonin. An antibody which prepares its antigen for ingestion by leucocytes or phagocytes.

optic axis. Direction in doubly refractive substance along which all light rays pass with same velocity.

optical activity. Power possessed by certain substances to rotate plane of polarization of light.

optical exaltation. Phenomenon in conjugated systems, i.e. containing double bonds separated by one single bond, where the molecular refraction is higher than the value calculated for two double bonds or than that observed in isomeric compounds containing two "isolated" double bonds, e.g. in 2:4 hexadiene.

optical rotation. The rotation to the left or right of the plane of polarization of polarized light upon passing thru certain media.

optically inactive substance. Substance which does not rotate the plane of polarized light.

orange mineral. See red lead.

orange oil. See oil, orange.

orange peel. Term descriptively applied to irregular wavy surfaces like that of an orange peel.

orange peel, sweet. The peel of the fresh fruit of Citrus aurantium, used in medicine and flavoring; containing orange oil used also in perfumery.

orange root. See hydrastis.

orangite. See thorite.

orbital (atomic wave-function). Alternative name for wave function, especially insofar as it determines the probability of the electron being in a given place.

orbital, molecular. Wave function of an electron as it moves in the field of all other electrons and the nuclei constituting the molecule, and is generally expressed as a linear combination of atomic orbitals.

orbital valence. Interaction of atoms in a molecule believed due to coupling between orbital motions of electrons.

orcein. $C_{28}H_{24}N_2O_7$; m.w. 500.20; red.-br. powd.; s.al.

orchil. See archil.

orchil extract. Bright red liquid obtained by water extraction of lichens; used in dyeing textiles, coloring marble and stoneware.

orcinol (5-methyl-1, 3-benzenediol; 5-methylresorcinol; 3, 5-dihydroxytoluene). $CH_3C_6H_3(OH)_2$; m.w. 124.06; col. monocl. cr.f.chl.; m.p. $+1H_2O$, 58, anh. 107-8; b.p. 289-90; s.w.; s.al.

β-orcinol. See resorcinol, 2, 5-dimethyl-.

orcinolphthalein. $C_{22}H_{16}O_6$; m.w. 360.12; col. pr. f. acet.; i.w.; s.al.

orcinol, 2, 4, 6-trinitro-. $(NO_2)_3C_6(CH_3)(OH)_2$; m.w. 259.06; lng. yel. need.; m.p. 163.5; i.w.; s.al.

order of a reaction. When a reaction has a rate which is proportional to some power of the concentration of one of the reacting substances, that power is called the order of the reaction with respect to the substance involved; the sum of all the orders with respect to various substances is called the total order or simply the order of the reaction.

ordinal number. Number of a line in a rotation-vibration band of a spectrum in either direction from zero line; a number denoting order, as first, second, etc.

ordinate. In analytical geometry, a line used to determine the position of a point with respect to fixed straight lines, taken as coordinate axes, usually the distance of a point from the *x*, or horizontal axis, the distance from the *y* axis being known as the *abscissa*.

ore. Mineral or raw material from which metals are extracted commercially, e.g. cinnabar, a source of mercury.

ore dressing. Processes of a mechanical nature to improve condition of an ore for subsequent treatment.

orexin. See quinazoline, 3, 4-dihydro-3-phenyl-.

organic acid. Compound containing the carboxyl group —C(=O)—OH, e.g. acetic acid, CH_3COOH.

organic chemistry. Chemistry of the carbon compounds.

organic radicals. *See separate section containing organic radicals.*

organized. Arrangement in definite form or structure.

organoleptic. Being able to receive a sense-impression as a sensory end-organ.

organolite. Base exchange substance of organic origin.

organometallic compound. Compound in which a metallic atom or atoms are combined with an organic radical, e.g. $C_2H_5{-}O{-}R$ / C_2H_5 / $Mg \cdot Cl$.

organophilic. Term applied to a substance which absorbs or is wetted by an organic liquid.

organosol. Colloidal dispersion in an organic liquid.

Oriental sweet gum. See styrax.

orientation. Relative positions of substituted and parent constituents.

orientation, higher. An ordering of crystalline regions so that they are parallel not only to the long axis, but also in a second crystallographic direction.

orientation polarization. Polarization resulting from presence of permanent dipoles.

origanum oil. See oil, thyme.

origin. Point of intersection of two axes.

Ornalith. Synthetic tar-acid resin.

ornithine (α, δ-diaminovaleric acid, 2, 5-diaminopentanoic acid). $CH_2(NH_2)(CH_2)_2CH(NH_2)COOH$; m.w. 132.11; syrup; s.w.; s.al.

ornithine, N[δ]-guanyl-. See arginine.

orometer. Barometer recording height above sea-level.

Oropon. Enzyme bate used in tanning.

orpiment. A mineral, As_2S_3; monocl., lem. yel.; sp.gr. 3.4-35; hardness 1.5-2.0.

Orr's white. See lithopone.

orris. See orris root.

orris oil. See oil, orris.

orris root (orris; irris). Rhizome of iris; used in medicine and cosmetics.

o-orsellinic acid (4, 6-dihydroxy-o-toluic acid; orsellic acid). $(HO)_2C_6H_2(CH_3){-}COOH$; m.w. 168.06; need. f. acet.; m.p. $-H_2O$, 100; s.w.; s.al.

orsellinic acid, 4-everninate. See evernic acid.

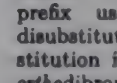
orsellinic acid, 4-methyl ether. See everninic acid.

orthanilic acid (o-aminobenzene sulfonic acid, o-anilinesulfonic acid). $NH_2C_6H_4SO_3H \cdot \frac{1}{2}H_2O$; m.w. 182.13; col. pr.; s.al.

Orthene. See benzene, 1, 2-dichloro-.

orthite (allanite). A mineral, $Ca_2(Al,Ce,Fe)_3(Al \cdot OH)(SiO_4)_3$; monocl., br. to blk.; sp.gr. 3.0-4.2; hardness 5.5-6.0.

ortho-. Prefix designating a compound where the maximum number of hydroxyl groups is attached to a particular atom, e.g. $Si(OH)_4$ or H_4SiO_4 is called *ortho*silicic acid; prefix used to indicate benzene disubstitution products where substitution is at adjacent carbons, e.g. *ortho*dibromobenzene,



ortho hydrogen. See hydrogen, ortho.

orthoacetic acid, triethyl ester (1, 1, 1-triethoxyethane). $CH_3C(OC_2H_5)_3$; m.w. 162.14; col. liq.; b.p. 142; s.al.

orthobaric. Term applied to coexistant liquid and vapor phases of a one component system.

orthocarbonic acid, tetraethyl ester (tetraethoxymethane). $C(OC_2H_5)_4$; m.w. 192.16; col. liq.; b.p. 159; s.al.

orthocarbonic acid, tetrapropyl ester (n-propyl orthocarbonate; tetrapropoxymethane). $C(OC_3H_7)_4$; m.w. 248.22; col. liq.; b.p. 224.2.

orthochromatic (isochromatic). In photographic light sensitive films, possessing special spectral sensitivity to green light, particularly of a wave length of 5600 Å.

orthoclase (potassium feldspar). A mineral, $K_2O \cdot Al_2O_3 \cdot 6SiO_2$; monocl., col., wh., pa. yel., flesh red to gray; sp.gr. 2.56; hardness 6.

orthocoll. See potassium guaiacol sulfonate.

orthodiazine. See pyridazine.

orthoformic acid, triethyl ester (triethoxymethane). $HC(OC_2H_5)_3$; m.w. 148.12; col. liq.; m.p. −76.1; b.p. 145.9; s.al.

orthoformic acid, triisopropyl ester (isopropyl orthoformate; triisopropoxymethane). $HC[OCH(CH_3)_2]_3$; m.w. 190.17; liq.; b.p. 166-8.

orthoformic acid, trimethyl ester (trimethoxymethane). $HC(OCH_3)_3$; m.w. 106.08; b.p. 101-2.

orthoformic acid, triphenyl ester (triphenoxymethane). $CH(OC_6H_5)_3$; m.w. 292.12; cr. m.p. 71; b.p. 265 [30]; s.al.

orthoformic acid, tripropyl ester (n-propyl orthoformate; tripropoxymethane). $HC(OC_3H_7)_3$; m.w. 190.17; liq.; b.p. 105 [20].

orthorhomic. Pertaining to a crystal system with three mutually rectangular unequal axes.

orthoscopic. Without optical distortion.

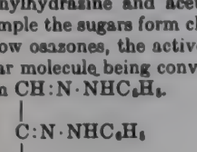
orthosilicate. See silicate, ortho-.

orthotomic. Term applied to system of light rays all of which can be cut at right angles by given surface.

Orvus WA. Sodium lauryl sulfate; used as wetting, emulsifying, finishing, dispersing and lubricating agent and as a detergent in the textile, electroplating and rubber industries.

osage orange extract. Extract from bark of osage orange tree (maclura aurantiaca); used in textile and leather manufacturing.

osazones. Characteristic crystalline substances formed by treatment of certain types of compounds with phenylhydrazine and acetic acid, for example the sugars form characteristic yellow osazones, the active end of the sugar molecule being converted to the form



oscine. See scopoline.

ose. See monosaccharide.

oside. A substance which upon hydrolysis yields only simple sugars.

osmic acid. See osmium oxide, tetr-.

osmiridium. See iridosmine.

osmium. Os; at. wt. 190.2; hex. gray-bl. met.; s.g. 22.48; m.p. 2700; b.p. >5300; i.w.; the densest of all the elements.

osmium ammonium aquopentachloride (III). $(NH_4)_2Os(H_2O)Cl_5 \cdot \frac{1}{2}H_2O$; m.w. 431.19; red.-br. cr.; s.w.; s.al.

osmium chloride, di-. $OsCl_2$; m.w. 261.71; dk. br. deliq.; i.w.; s.al.

osmium chloride, tetra-. $OsCl_4$; m.w. 332.63; red. br. need.; s.w. d.; i.al.

osmium chloride, tri-. $OsCl_3$; m.w. 297.17; cub. br.; m.p. d. 560-600; s.w.; s.al.

osmium chloride, tri-. $OsCl_3 \cdot 3H_2O$; m.w. 351.22; dk. grn. cr.; s.w.; s.al.

osmium fluoride, hexa-. OsF_6; m.w. 304.80; grn. cr.; m.p. >50; b.p. 205.

osmium fluoride, octo-. OsF_8; 342.80; citron yel. cr.; m.p. 34.4; b.p. 47.3; s.w. d.

osmium fluoride, tetra-. OsF_4; m.w. 266.80; br. powd.

osmium oxide, di-. OsO_2; m.w. 222.80; cub. or hex. red-br.; s.g. 7.91 [22]; m.p. d. 650; i.w.

osmium oxide, mon-. OsO; m.w. 206.80; blk.; i.w.

osmium oxide, sesqui-. Os_2O_3; m.w. 429.60; dk. br.; i.w.

osmium oxide, tetr-. OsO_4; m.w. 254.80; (a) monocl. col. (b) yel. mass.; s.g. 4.906 [22]; m.p. (a) 39.5 (b) 41; b.p. 130; s.w.; s.al.

osmium potassium hexachloride (IV). K_2OsCl_6; m.w. 481.74; cub. red.; s.w.; i.al.

osmium potassium hexachloride (III). $K_3OsCl_6 \cdot 3H_2O$; m.w. 574.89; cr. dk. red.; m.p. $-3H_2O$, 150; s.w.; s.al.

osmium sulfide, di-. OsS_2; m.w. 254.92; cub. blk.; i.w.

osmium sulfide, tetra-. OsS_4; m.w. 319.04; br. blk.; i.w.

osmium sulfite(ous). $OsSO_3$; m.w. 270.86; bl. blk.; i.w.

Osmo-Kaolin. Electrically purified colloidal aluminum silicate.

osmometer. Instrument for measuring osmotic pressure.

osmophore. Odor bearing radical, e.g. the ester radical, —C(=O)—OR.

osmosis. The migration of pure solvent thru a membrane from the less concentrated to the more concentrated solution, a process tending to produce equality of concentration on both sides of the membrane, and observed with membranes permeable to molecules of solvent but impermeable to solute molecules.

osmotic pressure. The pressure exhibited by molecules diffusing thru a membrane in the phenomenon of osmosis, measurable by the pressure required to counteract the transfer of fluid from one side of an osmotic membrane to another.

ossein. A protein obtained upon the removal of mineral matter from bone tissue.

Ostwald's dilution law. In weak solutions the degree of electrolytic dissociation is proportional to the dilution.

otto of roses. See attar of roses.

ounce (℥). ½th of a pound (Apothecary).

-ous. Suffix denoting, in case of acids, lesser oxygen content, e.g. sulfurous acid, H_2SO_3, as compared with sulfuric acid, H_2SO_4, or denoting a lower valence, e.g. ferrous chloride, Fe^{+2}, as compared with ferric, Fe^{+3}.

outgas (degas). To remove occluded or adsorbed gases by heating.

oven, drying. See drying oven.

over-potential. See overvoltage.

over-run. Expansion or increase of volume of ice-cream during process of manufacture.

overtone. See mass color.

overvoltage (uberspannung overpotential). Difference between the actual potentials at which visible gas evolution commences and the thermodynamically reversible value in the same solution, as measured by a hydrogen electrode.

ovule. A structure within the ovary of a flower, containing an egg cell which develops into a seed after fertilization.

oxa-. Designation for a hetero- oxygen atom in a ring, e.g. oxazine.

7-oxabicyclo [2, 2, 1] heptane-2, 3-dicarboxylic anhydride, 2, 3-dimethyl-. See cantharidin.

6-oxabicyclo [3, 2, 1] oct-3-ene, 4, 7, 7-trimethyl-. See pinol.

oxalacetic acid, diethyl ester (diethyl oxobutanedioate; diethyl hydroxybutenedioate). $C_2H_5OOCCOCH_2COOC_2H_5$ or $C_2H_5OOCC(OH):CHCOOC_2H_5$; m.w. 188.09; col. liq.; b.p. 132 [24]; i.w.; s.al.

oxalaldehyde. See glyoxal.

oxalaldehydic acid. See glyoxylic acid.

oxalan. See oxaluramide.

oxalate. A salt or ester of oxalic acid, $H_2C_2O_4$.

oxalic acid (ethanedioic acid). $COOH-COOH \cdot 2H_2O$; m.w. 126.05; col. monocl.; m.p. 101, 189 anh.; s.w.; s.al.

oxalic acid, diallyl ester (di-2-propenyl ethanedioate; allyl oxalate). $(COOC_3H_5)_2$; m.w. 170.08; oil; i.w.; s.al.

oxalic acid, diamyl. $(COOC_5H_{11})_2$; m.w. 230.17; pale yel.; sp.gr. 0.960 [20]; b.p. 135-155 at 20 mm.

oxalic acid, dianilide. See oxanilide.

oxalic acid, dibutyl ester (dibutyl ethanedioate; butyl oxalate). $(COOCH_2CH_2CH_2CH_3)_2$; m.w. 202.14; col. liq.; b.p. 243.4; i.w.; s.al.

oxalic acid, diethyl ester (diethyl ethanedioate; ethyl oxalate; oxalic ester). $(COOC_2H_5)_2$; m.w. 146.08; col. liq.; m.p. −40.6; b.p. 185.4; s.w.; s.al.

oxalic acid, diisoamyl ester (isoamyl oxalate; bis [γ-methylbutyl] ethanedioate). $(COOC_5H_{11})_2$; m.w. 230.17; liq.; b.p. 265; i.w.; s.al.

oxalic acid, diisobutyl ester (bis [β-methylpropyl] ethanedioate; isobutyl oxalate). $(COOC_4H_9)_2$; m.w. 202.14; col. liq.; b.p. 229; i.w.; s.al.

oxalic acid, dimethyl ester (dimethyl ethanedioate; methyl oxalate). $(COOCH_3)_2$; m.w. 118.05; col. monocl. tab.; m.p. 54; b.p. 163.3; s.al.

oxalic acid, dipropyl ester (propyl oxalate; dipropyl oxalate). $(COOCH_2CH_2CH_3)_2$; m.w. 174.11; col. liq.; b.p. 214-5; s.w.; s.al.

oxalic acid, ethyl methyl ester. $CH_3OOCCOOC_2H_5$; m.w. 132.06; col. liq.; b.p. 173.7; i.w.; s.al.

oxalic acid, monoamide. See oxamic acid.

oxalic acid, monoanilide. See oxanilic acid.

oxalic acid, monoureide. See oxaluric acid.

oxalic acid, p-phenylphenacyl ester. $(COOCH_2COC_6H_4C_6H_5)_2$; m.w. 478.17.

oxalic acid, piperazinium salt. $C_4H_{10}N_2 \cdot C_2H_2O_4$; m.w. 176.11; wh. cr.; m.p. >300; s.w.; s.al.

oxalic acid, silico-. See silico-oxalic acid.

oxalic ester. See oxalic acid, diethyl ester.

oxalimide. See oximide.

oxalonitrile. See cyanogen.

oxaluramide (oxamic acid ureide; oxalan). $NH_2CONHCOCONH_2$; m.w. 131.06; cr.; i.w.; s.al.

oxaluric acid (carbamyloxamic acid; oxalic monoureide). $NH_2CONHCOCOOH$; m.w. 132.05; cr. powd.; m.p. 187; s.w.

oxalyl chloride (ethanedioyl chloride). ClOCCOCl; m.w. 126.91; col. fum. liq.; m.p. −12; b.p. 64.

oxamethan. See oxamic acid, ethyl ester.

oxamic acid (oxalic acid monoamide). $NH_2COCOOH$; m.w. 89.03; col. cr.; s.al.

oxamic acid, N, N'-dimethyl- (sym-dimethyloxamide). $(CONHCH_3)_2$; m.w. 116.08; col. leaf. or need. f.w.; m.p. 217; s.al.

oxamic acid, N, N'-diphenyl-. See oxanilide.

oxamic acid, ethyl ester (ethyl oxamate; oxamethan). $NH_2COCOOC_2H_5$; m.w. 117.06; rhomb. leaf.; m.p. 115; s.w.; s.al.

oxamic acid, ureide. See oxaluramide.

oxamide (ethanediamide; oxalamide). $NH_2COCONH_2$; m.w. 88.05; wh. powd. monocl.; s.al.

oxamide, N-acetyl-, ethyl ester (ethyl acetyloxamate). $CH_3CONHCOCOOC_2H_5$; m.w. 159.08; need.; m.p. 54; s.al.

oxamide, carbamyl-. See oxaluric acid.

oxamide, N, N'-diethyl- (N, N'-diethylethanediamide; sym-diethyloxamide). $(CONHC_2H_5)_2$; m.w. 144.11; col. need. f.al.; m.p. 190; s.w.; s.al.

oxamide, N, N-dimethyl- (unsym-dimethyloxamide). $(CH_3)_2NCOCONH_2$; m.w. 116.08; col. pl. f. bs.; m.p. 104; s.w.; s.al.

oxamide, phenyl-. See oxanilic acid.

oxanilic acid (phenyloxamic acid; oxalic acid monoanilide). $C_6H_5NHCOCOOH$; m.w. 165.06; rhomb. need. f.bs.; m.p. 150; s.w.; s.al.

oxanilide (N, N'-diphenyloxamide; oxalic acid dianilide). $(CONHC_6H_5)_2$; m.w. 240.11; lust. sc. f.bs.; m.p. 250; b.p. 320; i.w.; s.al.

oxanthranol (9, 10-anthradiol or 10-hydroxyanthrone; anthrahydroquinone). $C_6H_4(COH)_2C_6H_4$ or $C_6H_4(CO)(CHOH)C_6H_4$; m.w. 210.08; ylsh. need. unst.; m.p. 180; i.w.; s.al.

1, 2-oxathietan-4-one, 2, 2-dihydro-2, 2-dimethyl-. See thetin, dimethyl-.

1, 4-oxazine, tetrahydro-. See morpholine.

oxazole, triphenyl- (bensilam; azobensil). $OC(C_6H_5):NC(C_6H_5):C(C_6H_5)$; m.w. 297.13; rhomb. pr. f. al. et.; m.p. 115; s.al.

oxetone. A compound consisting of two five membered rings at right angles to each other in space, with one carbon atom common to both rings.

oxgall. Bile from gall bladder of oxen; yel.-gr.; used in medicine, as a cleansing agent, and in engraving and lithography.

oxidase. An enzyme which catalyzes oxidation in the living cell.

oxidation. Combination of substances with oxygen, as by exposure to air or in burning; an increase in valence; in all cases, a chemical change characterized by loss of electrons

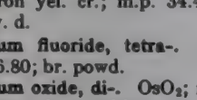
oxidation capacity. Number of oxidation equivalents in a molecule acting as an oxidizing agent.

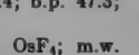
oxidation-reduction reaction. A reaction involving transfer of electrons between atoms, a term taking cognizance of the fact that oxidation cannot take place without simultaneous reduction or vice-versa; hence a term applicable to any oxidation or reduction reaction

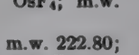
oxide. A compound of an element with oxygen, as zinc oxide, ZnO, or sulfur dioxide, SO_2; also less commonly, in organic chemistry, compounds paralleling water or inorganic oxides in structure, e.g. diethylene oxide (ether) and the trialkylamine oxides.

oxidizing agent. Substance which, under suitable conditions causes the oxidation of another substance; a substance which accepts electrons in chemical reaction.

oxime. Compound of the general type



oximide (oxalimide).  71.02; col. pr.

oxindole (2 [3]-indolone; o-aminotoluic acid lactam).  m.w. 133.06; col. need. f.w.; m.p. 1 s.w.; s.al.

oxindole, 3-hydroxy- (dioxindole; aminomandelic acid lactam) $C_6H_4NHCOCHOH$; m.w. 149. rhomb. pr.f.al.; m.p. 180; s.w.

oxindole, 3-imino-. See imesatin.

oxirane. See ethylene oxide.

oxiraneacetonitrile. See epicyanhydrin.

oxirane, (chloromethyl)-. See epichlorhydrin.

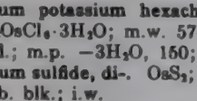
oxirane, (iodomethyl)-. See epiiodhydrin.

oxirane, methyl-. See propene oxide.

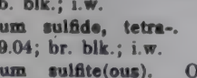
oxirene, methyl-. See propene, 1, epoxy-.

Oxone. A convenient form of sodium peroxide, i.e. in form of cubes, used in the preparation of oxygen by its action with water.

oxonium compounds. Addition compounds of organic substances containing oxygen, in which the oxygen appears as quadrivalent, e.g.



oxonium salts. Salts of the general type



, wherein oxygen is quadrivalent.

oxy-acid. An acid which contains oxygen; a term applicable to most inorganic acids other than the halogen acids.

oxy-salt. A salt of an oxy-acid (q.v.

oxyacanthine (vinetine). $C_{19}H_{21}NO_3$; m.w. 311.17; wh. need. f.al. or e m.p. 202-14; s.w.; s.al.

oxyacanthine, hydrochloride. $C_{19}H_{21}NO_3 \cdot HCl \cdot 2H_2O$; m.w. 383.67; need.

oxyacanthine, nitrate. $C_{19}H_{21}O_3N \cdot HNO_3 \cdot 2H_2O$; m.w. 410.22; need.; m. 195-200; s.w.

oxybutyric acid, beta. $CH_3CH(OH)CH_2COOH$; m.w. 104.06; viscid y mass; s.w.; used as an intermediat

oxycellulose. Mixture of cellulose a degradation products produced action on cellulose of air in presen of superheated steam or alkalies.

oxychloride. A compound of chlori and oxygen with another elemen e.g. magnesium oxychloride, $MgCl_2 \cdot 5MgO$.

oxydase. See oxidase.

oxygen. O; at. wt. 16.00; col. gas liq. or hex.; s.g. 1.429° g/l, lq. 1.14 s. 1.426$^{-183.6}$; m.p. −218.4; b.

−183.0; s.w.; s.al.; the most abundant and widely distributed of the earth's elements, most rocks containing almost 50% oxygen, water containing 88.8%, and the air 21% free oxygen by volume; its occurrence free and combined being essential to life; used in medicine and surgery, and in various high temperature torches.

xygen number. Amount of oxygen absorbed in the oxidation of 100 g. oil by means of benzoyl hydrogen peroxide under proper conditions.

oxygen point. Temperature of equilibrium between liquid oxygen and its vapor at 760 mm. (−182.97° C.).

oxyhemoglobin. A loose combination of oxygen with hemoglobin; the compound formed in the lungs when the hemoglobin of the red cells is oxygenated, often represented as HbO.

oxynarcotine. $C_{21}H_{23}NO_8$; m.w. 429.19; need.; s.al.

oxyneurine. See betaine.

Oxynone. Diamino-diphenylamine; a rubber accelerator.

oxyparteine. $C_{15}H_{24}N_2O$; m.w. 248.20; wh. hyg. need.; m.p. 84; s.w.; s.al.

oxyparteine, hydrochloride. $C_{15}H_{24}N_2O \cdot HCl \cdot 4H_2O$; m.w. 356.73; wh. cr.; m.p. 48-50; s.w.; s.al.

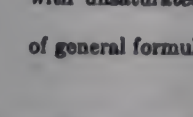
n-oxyquinoline sulfate. See quinosol.

oxytocic. Term applied to drugs acting directly on smooth muscle of the uterus, causing contraction.

-oyl. See carbonyl.

ozokerite wax. See wax, ozokerite.

ozone. O_3; m.w. 48.00; col. gas or dk. bl. liq.; s.g. 2.144 g/l, lq. 1.71^{-183}; m.p. −251; b.p. −112; s.w.

ozonide. Unstable compound of ozone with unsaturated organic substances, of general formula  .

oxalamide. See oxamide.

P

p-electron. Orbital electron having an azimuthal quantum number of 1.

P number. See Polenske number.

P series. Frequency series in x-ray element spectrum believed due to transition of electrons from various higher quantum states to state of principal quantum number 6.

P-state (P-level). Condition of atom having azimuthal quantum number 1.

Paalsgaard oil. See Schou oil.

pachimeter. Instrument used to study heaviness of flour doughs and soils.

pachoid. In a transition state between solid and liquid forms of certain substances.

packing fraction. Ratio of difference between atomic weight of an isotope and nearest whole number, to the atomic weight, in terms of ten-thousandths.

paeonol. See peonol.

paint. A protective and decorative coating consisting of a mixture of insoluble substances of good hiding properties suspended in a drying oil.

paint farm. A field or area where coated panels are tested against sun and weather. Panels are placed outdoors at 45° angles facing toward the south.

paint filler. White insoluble material used as an extender for paint pigments, e.g. barium sulfate, infusorial earth, whiting, plaster of paris, clay, etc. See filler.

paint vehicle. The suspension medium of a paint, consisting of such substances as linseed oil, fish oil, benzene, turpentine, etc.

painter's naphtha. Petroleum solvent; b.p. 103.3-200° C.

Palatinol. Ethyl phthalate.

Palatinol BB. Benzyl butyl phthalates.

Palatinol C. Dibutyl phthalate.

Palatinol E. Diethyl glycol phthalate.

Palatinol JC. Di(iso)butyl phthalate.

Palatinol M. Methyl or dimethyl phthalate.

Palatinol O. Dimethyl glycol phthalate.

palladium. Pd; at. wt. 106.7; cub. silv.-wh. met.; s.g. 11.97 °; 11.40 $^{22.5}$; m.p. 1555; b.p. >2200; i.w.; a metal of the platinum family; capable of absorbing large volumes of hydrogen.

palladium bromide. $PdBr_2$; m.w. 266.53; red.-br.; i.w.

palladium chloride. $PdCl_2$; m.w. 177.61; cub. need., dk. red, deliq.; m.p. 500 d.; s.w.

palladium chloride. $PdCl_2 \cdot 2H_2O$; m.w. 213.65; br. prisms, deliq.; s.w.

palladium cyanide. $Pd(CN)_2$; m.w 158.72; yelsh. wh.; i.w.

palladium fluoride. PdF_2; m.w. 144.70; br.; s.w.

palladium fluoride, tri-. PdF_3; m.w. 163.70; rhomb. blk.; s.g. 5.06.

palladium hydride. $Pd_2H(Pd_4H_2)$; m.w. 214.41; silv. metallic; s.g. 10.76.

palladium hydroxide(ic). $PdO_2 \cdot xH_2O$; dull red; m.p. d. $-H_2O$, $-O$; i.w.

palladium hydroxide(ous). $PdO \cdot xH_2O$; yel. to br.; i.w.

palladium iodide. PdI_2; m.w. 360.54; blk. powd.; m.p. d. 360; i.w.; i.al.

palladium nitrate. $Pd(NO_3)_2$; m.w. 230.72; rhomb. br.-yel., deliq.

palladium oxide, di-. PdO_2; m.w. 138.70; blk.; m.p. $-O$, 200; s.w.

palladium oxide, mon-. PdO; m.w. 122.70; blk.; s.g. 8.31; m.p. d. 750; i.w.

palladium oxide, sub-. Pd_2O; m.w. 229.40; blk.; i.w.

palladium sulfate. $PdSO_4 \cdot 2H_2O$; m.w. 238.79; red-br. cr., deliq.; s.w.

palladium sulfide, di-. PdS_2; m.w. 170.82; dk. br.; i.w.

palladium sulfide, mono-. PdS; m.w. 138.76; br.-blk.; m.p. 950 d.; i.w.

palladium sulfide, sub-. Pd_2S; m.w. 245.46; grn.-gray; s.g. 7.303 ^{15}; m.p. d. 800; i.w.

palladodiammine dichloride. $PdCl_2(NH_3)_2$; m.w. 211.68; tetr. yel.; s.g. 2.5; s.w.

palladodiammine dihydroxide. $Pd(OH)_2(NH_3)_2$; m.w. 174.78; micr.-cr. yel.; m.p. >105; s.w.

palladous. Pertaining to palladium compounds.

palm butter. See palm oil.

palm grease. See palm oil.

palm kernel oil. See oil, palm kernel.

palm nut oil. See oil, palm kernel.

palm oil. See oil, palm.

palm pitch. See pitch, palm.

palm wax. See wax, palm, and wax, carnauba.

palmarosa oil. See oil, palmarosa.

palmitaldehyde, oxime (hexadecanal oxime). $CH_3(CH_2)_{14}CH{:}NOH$; m.w. 255.27; need. f.al.; m.p. 89.5; i.w.; s.al.

palmitamide (hexadecanamide; palmitic amide). $CH_3(CH_2)_{14}CONH_2$; m.w. 255.27; col. leaf.; m.p. 106; b.p. 236 ^{12}; i.w.; s.al.

palmitic acid (hexadecanoic acid; n-hexadecylic acid). $CH_3(CH_2)_{14}COOH$; m.w. 256.25; col. need.; m.p. 64; i.w.

palmitic acid, benzyl ester. $C_{15}H_{31}COOCH_2C_6H_5$; m.w. 346.30; cr.; m.p. 36.0; i.w.; s.al.

palmitic acid, cetyl ester (cetyl palmitate; hexadecyl hexadecanoate). $C_{15}H_{31}COOC_{16}H_{33}$; m.w. 480.50; pl.f.et. or ac.a.; m.p. 55.5; i.w.; s.al.

palmitic acid, ethylene ester. See glycol, dipalmitate.

palmitic acid, ethyl ester (ethyl hexadecanoate). $CH_3(CH_2)_{14}COOC_2H_5$; m.w. 284.28; col. need.; m.p. 24.2; b.p. 185.5 ^{10}; i.w.; s.al.

palmitic acid, glyceryl ester. See glycerol, tripalmitate.

palmitic acid, methyl ester (methyl hexadecanoate; methyl palmitate). $C_{15}H_{31}COOCH_3$; m.w. 270.27; col.; m.p. 29.5; b.p. 196 ^{15}; i.w.; s.al.

palmitic acid, myricyl ester. $C_{15}H_{31}COOC_{31}H_{63}$; m.w. 690.73; feath. cr.; m.p. 72; i.w.; i.al.

palmitic amide. See palmitamide.

palmitin. See glycerol, tripalmitate.

palmitolic acid (7-hexadecynoic acid). $CH_3(CH_2)_7C{:}C(CH_2)_4COOH$; m.w. 252.22; col. need. f.w.; m.p. 47; b.p. 240 ^{15}; i.w.; s.al.

palmitone. See 16-hentriacontanone.

palmitonitrile (hexadecanenitrile). $CH_3(CH_2)_{14}CN$; m.w. 237.35; col. hex. tab.; m.p. 31; b.p. 251.5 ^{100}; i.w. s.al.

palmityl chloride (hexadecanoyl chloride). $CH_3(CH_2)_{14}COCl$; m.w. 274.70; col. liq. or cr.; m.p. 11-2; b.p. 194.5 ^{17}.

pan scale. The calcium sulfate from brine crystallization; used in cattle food and fertilizer.

panchromatic. In photography, the term applied to films sensitive to all the visible spectrum.

pancreatic juice. The alkaline, enzymatic secretion of the pancreas, effective largely in digestion of protein, but containing also starch and fat-splitting enzymes.

pancreatic lipase. See steapsin.

pancreatin. Powder extract from pancreatic gland, containing the enzymes amylopsin, trypsin and steapsin; s.w.; i.al.; used as a ferment and in medicine.

pandemic. Designation for a disease which is epidemic over a wide area, e.g. influenza.

Pandura. Synthetic tar-acid resin.

Panelyte. Synthetic tar-acid resin.

Panilax. Synthetic aniline resin.

papain (papayotin; vegetable pepsin). Substance obtained from juice of fruit and leaves of carica papaya; a pepsin-like enzyme.

papaverine. $C_{20}H_{21}NO_4$; m.w. 339.17; col. rhomb. need. f.al.; m.p. 147; s.w.; s.al.

papaverine, hydrochloride. $C_{20}H_{21}NO_4 \cdot HCl$; m.w. 375.64; monocl. pl.; m.p. 231; s.al.

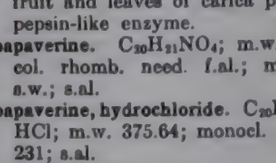
papayotin. See papain.

paper. Fabric resulting from the deposition of water-suspended fibers.

paper, parchment. See parchment paper.

papier-mache. Paper pulp mixed with adhesive binder and molded while moist.

para. In disubstituted benzene compounds, pertaining to substitution on opposite nuclear carbon atoms, e.g.



para-dibromobenzene:

para compounds. See parent compound, e.g. for para-acetanilide, see acetanilide.

para hydrogen. See hydrogen, para.

para red. See 2-naphthol, 1-p-phenylazo-.

paraacetaldehyde. See paraldehyde.

parabanic acid (oxalylurea). $NHCONHCOCO$; m.w. 114.03; col. monocl. pl. f.w.; s.al.

parabanic acid, dimethyl-. See cholestrophan.

parabola. Conic section or curve made by the intersection of a plane thru a cone parallel to one of its sides; curve which is the locus of points equidistant from a fixed point and a fixed line; the path traced by a projectile.

parabutyraldehyde. $(C_3H_7CHO)_3$; m.w. 216.19; b.p. 98-100 ^{35}.

parachor. A constant associated with each structural part of a compound, as the atoms and the various bonds, these being additive, giving the parachor for the compound. The parachor is a function of molecular volume, devised by Sugden for the determination of molecular structure.

paraconic acid (tetrahydro-5-oxo-3-furan carboxylic acid; itamalic acid γ-lactone). $CH_2COOCH_2CHCOOH$; m.w. 130.05; deliq. cr.; m.p. 58; s.w.

paraconic acid, 2, 2-dimethyl-. See terebic acid.

paracoumarone. See coumarone-indene resin.

paracrystalline. Term applied to grouping of molecules just prior to crystallization.

paracumarone. See coumarone-inde resin.

paracyanogen. $(CN)_x$; m.w. (26.0 br. powd.; i.w.; i.al.

paradiazine. See pyrazine.

Paradura. Phenalic synthetic resin

paraffin, chlorinated. Paraffin hyd carbons treated at 160° C. w chlorine yielding pale to amb neutral, light and viscous oils soft waxes; sp.gr. .900-1.50; fla resistant; noninflammable; used preparation of materials for mak textiles, draperies, etc.

paraffin, liquid. See mineral oil.

paraffin, native. See wax, ozokerite

paraffin oil. See oil, mineral.

paraffin scale. Crude paraffin wax.

paraffin slack wax. See slack wax.

paraffin wax. A solid mixture of purif petroleum hydrocarbons melting tween 40 and 60° C.

Paraflow. Viscous oil made by c densation of chlorinated wax w an aromatic hydrocarbon, used a pour-point depressant for mineral

paraformaldehyde. See polyo methylene.

paragenose. Substance, a trace of wh has an unusual odor effect.

Paralac. Synthetic alkyd resin.

paralactic acid. See d-lactic acid.

paraldehyde (2, 4, 6-trimethyl-1, 3, trioxane; paraacetaldehyde). $(CH_3)OCH(CH_3)OCHCH_3$; m. 132.09; col. liq.; m.p. 10.5; b.p. 12 s.w.; s.al.

paraldol. $(C_4H_8O_2)_3$; m.w. 176.12; tricl. cr.; m.p. 82; b.p. 90 ^{15}; s.w.; s.

paraleucaniline. See p-leucaniline.

parallax. The error, or difference observations due to a displacement the line of sight; in astronomy t apparent shift in a star's position d to change of position of the ear in its orbit; in reading of instrumen the error due to shift in position of t observer in viewing a pointer, e on a scale.

parallelogram. Four sided figure wh opposite sides are parallel.

param. See guanidine, 1-cyano-.

paramagnetic. Pertaining to substanc tending to set its longest dimensi parallel to the magnetic field; havi a permeability greater than 1. Co pare diamagnetic.

paramelaconite. See copper oxide(i

parameter. Constant in function equation referring to a characteris property such as dimension; ra of displacement of an atom from usual position in a crystal to t lattice constant in the direction displacement; distance from ax origin of a crystal to the intersecti of any axis with a crystal face.

parametral plane. Crystal plane havi parameters equal to 1.

paramorphine. See thebaine.

paranitraniline red. See 2-naphth 1-p-phenylazo-.

paranitrobenzene-azo-beta-naphth See 2-naphthol, 1-p-phenylazo-.

Paranol. Modified phenol-formaldeh resin.

Paraplex. Synthetic plasticizing alk resin.

pararosaniline (tris[p-aminophenyl]carbinol; p, p′, p″-triaminotriphenylcarbinol). $(H_2NC_6H_4)_3COH$; m.w. 305.17; m.w. col.-red leaf.; m.p. 189; i.w.; s.al.

pararosaniline, hexamethyl-. See crystal violet (base).

pararosolic acid. See aurin.

parasept, methyl. See methyl p-hydroxy benzoate.

parathropic. Term applied to bacteria that feed on living matter, e.g. disease producing bacteria.

paraxial. Term applied to light rays forming very small angles with the optical axis.

paraxylic acid. See 3, 4-xylic acid.

parchment paper. A modified paper formed by treatment with sulfuric acid; tough, resistant to oil and grease; used for wrapping butter, lard, etc.

parchment, vegetable. See vegetable parchment.

parent. Element from which a radioactive product is produced.

Paris black. See bone black.

Paris green. See copper arsenite, aceto-.

parisite. A mineral, $CaO \cdot 2CeOF \cdot 3CO_3$; trig., rhbdr., brnsh., yel.; sp.gr. 4.320-4.42; hardness 4.5.

parkerizing. See Parker rustproofing process.

Parker rustproofing process. The treatment of iron and steel articles by dipping into hot acid phosphate solution.

Parkes process. Method for separating silver from lead in which zinc is stirred into the lead and forms a layer above the latter. The silver, being much more soluble in zinc than lead, is largely removed into this upper layer.

parolyting. Canvas-wiping method of applying a bituminous coating to underground pipe.

parthenogenetic merogony. Development of non-nucleate parts of eggs which have been artificially activated.

parsley camphor. See apiole.

partial condensation. See dephlegmation.

partial pressures, Dalton's law of. See Dalton's law of partial pressure.

particle breadth. Minimum distance between two parallel lines tangential to the particle when placed in the most stable position.

particle diameter, mean. Cube root of volume of the particle.

particle flatness ratio. Particle breadth divided by particle thickness.

particle length. Distance between two tangents to the projected outline of the particle drawn perpendicularly to the tangents defining particle breadth (q.v.).

particle length ratio. Particle length divided by particle breadth.

particle prismoidal ratio. Particle volume divided by product of particle projected area and particle thickness.

particle projected area ratio. Projected particle area divided by product of particle length and breadth.

particle thickness. Distance between two planes tangential to the surface of the particle and parallel to the plane of the projected image.

parting. Joint or surface separating two parts of a mold.

partition coefficient. See distribution ratio.

pasteurization. Partial sterilization of a liquid by subjection to elevated temperature, e.g. pasteurization of milk by holding at 63-65.5° C for 30 min.

partition, law of. A solute, soluble in each of two immiscible liquids, will distribute itself between the two in concentrations proportional to the ratio of its solubility in each.

α-parvoline (2-ethyl-3, 5-dimethylpyridine). $C_9H_{13}N$; m.w. 135.11; liq.; b.p. 188; s.w.; s.al.

β-parvoline (tetramethylpyridine; parvuline). $C_5H(CH_3)_4N$; m.w. 135.11; liq.; b.p. 220.

parvuline. See β-parvoline.

Pascal's principle. If the pressure over any part of the boundary of a body of liquid is increased by a definite amount, then the pressure at every point in the liquid is increased by the same amount.

Paschen law. Sparking potential between two electrodes in a gas is a function of the pressure times length of spark.

passivity. Abnormal chemically unreactive state of a metal, for example, iron or nickel, induced by action of strong oxidizing agents such as nitric or chromic acids.

patchouli oil. See oil, patchouli.

path, reaction. Any continuous series of configurations leading from the inital to the final state.

pathogen. Disease producing organism.

pathogenic. Disease producing.

patina. Green deposit on exposed copper surfaces, a copper carbonate.

patronite. A vanadium ore, V_2S_5.

pattern. Model from which castings are made.

paucine. $C_{27}H_{28}N_8O_8 \cdot 6\frac{1}{2}H_2O$; m.w. 630.45; yel. leaf.; i.w.; i.al.

Pauli's exclusion principle. In any one atom there cannot exist two electrons with the same four quantum numbers.

payta. See rhatany root.

peach kernel oil. See oil, peach kernel.

peanut oil. See oil, peanut.

peanut ore. See wolframite.

pearl. Calcium carbonate radially interstratified with certain membranes resulting from certain shell-fish (pearl oyster) secretions; s.g. 2.5-2.75.

pearl alum. See aluminum sulfate.

pearl ash. See potassium carbonate.

pearl essence. Lustrous fish scales used to make artificial pearls.

pearl moss. See moss, Irish.

pearlite. Steel with the structure of the iron-carbon eutectoid which contains about 0.85% carbon and consists of alternating parallel plates or lamellae of ferrite and cementite.

pearl spar. See dolomite.

peat. Marshy accumulation of partly decayed vegetable matter; a fuel.

peat moss. See sphagnum.

pectin. Mucilaginous, complex vegetable carbohydrate found in fruit juices, gelatinizing under suitable conditions.

pectinase. Enzyme which hydrolyzes pectase.

pectinose. See dl-arabinose.

pectisation. Coagulation of a colloidal solution.

pectocellulose. Compound or intimate mixture of cellulose and pectin found in plants, e.g. flax.

pectograph. Desiccated sol deposit from colloidal solution.

pectolite. A mineral, $HNaCa_2(SiO_3)_3$; monocl., col., wh., grayish wh.; sp.gr. 2.74-2.88; hardness 4.5-5.0.

pectose. The unripe pulpy part of fruit which is converted to pectin; i.w.; methoxylated pectin.

pedology. Science of the soil.

pegmatite (giant granite). Granite consisting of large crystals; used in building.

pelargonaldehyde, oxime (nonanal oxime). $CH_3(CH_2)_7CH{:}NOH$; m.w. 157.16; leaf. f. dil. al.; m.p. 63; i.w.; s.al.

pelargonamide (nonanamide). $CH_3(CH_2)_7CONH_2$; m.w. 157.16; col.; m.p. 99-100; i.w.; s.al.

pelargone. See 9-heptadecanone.

pelargonic acid (nonanoic acid; n-nonylic acid). $CH_3(CH_2)_7COOH$; m.w. 158.14; col. oily liq.; m.p. 12; b.p. 254; s.w.; s.al.

pelargonic acid, ethyl ester (ethyl nonanoate; ethyl n-nonoate). $CH_3(CH_2)_7COOC_2H_5$; m.w. 186.17; col. liq.; m.p. −36.7; b.p. 227; i.w.; s.al.

pelargonic acid, methyl ester (methyl nonanoate; methyl pelargonate). $CH_3(CH_2)_7COOCH_3$; m.w. 172.16; liq.; b.p. 214; i.w.; s.al.

pelargononitrile (nonanenitrile; n-octyl cyanide). $CH_3(CH_2)_7CN$; m.w. 139.14; col. liq.; m.p. −34.2; b.p. 224.0; i.w.; s.al.

pelargonyl chloride (nonanoyl chloride). $CH_3(CH_2)_7COCl$; m.w. 176.59; col. liq.; m.p. −60.5; b.p. 215.35.

pelletierine (punicine). $C_8H_{15}NO$; m.w. 141.13; col. oil; s.al.

pelletierine, sulfate. $(C_8H_{15}NO)_2 \cdot H_2SO_4$; m.w. 380.38; br. syrupy liq., or cr. mass; s.w.; s.al.

pellotine. $C_{13}H_{19}NO_3$; m.w. 237.16; pl. f.al.; m.p. 110; i.w.; s.al.

Pelshenke test. A test giving a measure of the baking value of flour.

Peltier coefficient. Amount of heat given off or absorbed per second per ampere of current at a thermojunction exhibiting the Peltier effect (q.v.).

Peltier effect. Heating or cooling of a junction of two different metals by a current thru the junction, (excluding heating produced by resistance), depending on direction of current.

pencil stone. See pyrophyllite.

penetrance coefficient. Surface tension multiplied by fluidity coefficient divided by 2.

penetrant. Substance which aids or speeds penetration of a fluid. See introfier.

penetration tension. Surface tension multiplied by cosine of angle of contact.

Penetrols. Wetting-out and penetrating agents, widely used in industry for removing ink from old paper, impregnating saturated papers, in the manufacture of textiles, leather, metal cleaning and pickling compounds, agricultural sprays.

penetrometer. Instrument for testing penetration of asphalt, greases, etc.

penfieldite. A mineral, $PbO \cdot 2PbCl_2$; hex., wh.

penninite. A mineral, $5(Mg,Fe)O \cdot Al_2O_3 \cdot 3SiO_2 \cdot 4H_2O$; pseudo-rhbdr., grn., vlt., pink, rose red; rar. yelsh. or silver wh.; sp.gr. 2.6-2.85; hardness 2.0-2.5.

pennyroyal. See hedeoma.

pennyroyal oil. See oil, pennyroyal.

pennyweight (dwt.). $\frac{1}{20}$th of an ounce (Troy).

penta. Prefix signifying five.

Pentacetate. Amyl acetate-amyl alcohol solvent; used in cellulose lacquers.

pentachlorethane. See ethane, pentachloro-.

pentad. An element having a valence of five.

pentadecanal, oxime. $CH_3(CH_2)_{13}CH{:}NOH$; m.w. 241.25; need. f.dil.al.; m.p. 86; i.w.; s.al.

pentadecane (n-pentadecane). $CH_3(CH_2)_{13}CH_3$; m.w. 212.25; col. liq.; m.p. 10; b.p. 270.5; i.w.; s.al.

1-pentadecanol (n-pentadecyl alcohol). $CH_3(CH_2)_{14}OH$; m.w. 228.25; cr.; m.p. 43.84.

8-pentadecanone (diheptyl ketone; caprylone). $[CH_3(CH_2)_6]_2CO$; m.w. 226.23; cr.f.al.; m.p. 40; b.p. 178; s.al.

n-pentadecyl alcohol. See 1-pentadecanol.

1, 2-pentadiene (ethylallene). $CH_2{:}C{:}CHCH_2CH_3$; m.w. 68.06; b.p. 45.

1, 3-pentadiene (piperylene; α-methylbivinyl). $CH_2{:}CHCH{:}CHCH_3$; m.w. 68.06; liq.; b.p. 43.

1, 4-pentadiene. $CH_2{:}CHCH_2CH{:}CH_2$; m.w. 68.06; b.p. 25.8-6.2.

2, 3-pentadiene. $CH_3CH{:}C{:}CHCH_3$; m.w. 68.06; liq.; b.p. 49-51.

2, 4-pentadienoic acid (β-vinylacrylic acid; α γ-pentadienic acid). $CH_2{:}CH{-}CH{:}CHCOOH$; m.w. 98.05; pr.f.et.; m.p. 80; s.w.; s.al.

2, 4-pentadienoic acid, 5-(3, 4-methylenedioxyphenyl-. See piperic acid.

1, 4-pentadien-3-one, 1, 5-diphenyl-. See styryl ketone.

pentaerithritol (pentaerythrite; 2, 2-bishydroxymethyl-1, 3-propanediol). $C(CH_2OH)_4$; m.w. 136.09; tetrag. cr.; m.p. 253.

pentaerythritol tetra-acetate. $C(CH_2OO{-}C{\cdot}CH_3)_4$; m.w. 304.16; wh. cryst. powd.; m.p. 80; b.p. 225 [30]; s.w.; used in special lacquer formulation; plasticizer of cellulose acetate and nitrate and of other plastic products.

pentaglycerine, pentaglycerol. See 1, 3-propanediol, 2-hydroxymethyl-2-methyl-.

Pentalarm. Amyl mercaptan, $C_5H_{11}SH$ m.w. 104.15; used for odorization of natural gas.

pentamethyldiamine. See cadaverine.

pentamethylene. See cyclopentane.

pentamethylene dibromide. See pentane, 1, 5-dibromo-.

pentamethylene dichloride. See pentane, 1, 5-dichloro-.

pentamethylene glycol. See 1, 5-pentanediol.

pentamethylene, keto-. See cyclopentanone.

pentamethylene oxide. See pyran, tetrahydro-.

pentamethylenimine. See piperidine.

pentanal. See valeraldehyde.

pentanal, 4-oxo-. See levulinaldehyde.

pentanamide. See valeramide.

pentane (n-pentane). $CH_3(CH_2)_3CH_3$; m.w. 72.09; col. liq.; m.p. −131.5; b.p. 36.2; s.al.

pentane,—. See the corresponding "amyl" derivative, e.g. 1-chloropentane is found under amyl chloride.

pentane candle. A standardized light source, utilizing pentane, defined as 1 candlepower or 1 International Candle.

pentane, 1-amino-. See amylamine.

pentane, 2-amino-. See butylamine, α-methyl-.

pentane, 3-amino-. See propylamine, α-ethyl-.

pentane, 1-amino-4-methyl-. See isohexylamine.

pentane, 3, 3-bisethylsulfonyl-. See tetronal.

pentane, 1-bromo-. See amyl bromide.

3-pentane carboxylic acid. See butyric acid, α-ethyl-.

pentane, 1-chloro-. See amyl chloride.

pentane, 2-chloro-. $CH_3CHClCH_2CH_2{-}CH_3$; m.w. 106.54; liq.; b.p. 96-7; i.w.; s.al.

pentane, 3-chloro-. $CH_3CH_2CHClCH_2{-}CH_3$; m.w. 106.54; b.p. 104-5.

1, 5-pentanediamine. See cadaverine.

pentane, 1, 5-dibromo- (pentamethylene-dibromide). $CH_2Br(CH_2)_3CH_2Br$; m.w. 229.91; col. arom. liq.; m.p. −35; b.p. 224; i.w.

pentane, 1, 5-dichloro- (pentamethylene-dichloride). $Cl(CH_2)_5Cl$; m.w. 140.99; b.p. 178; i.w.; s.al.

pentane, 2, 2-dimethyl- (trimethylpropylmethane). $(CH_3)_3CCH_2CH_2{-}CH_3$; m.w. 100.12; col. liq.; m.p. −125; b.p. 78.9; i.w.; s.al.

pentane, 2, 3-dimethyl- (ethylisopropylmethylmethane). $CH_3CH(CH_3){-}CH(CH_3)CH_2CH_3$; m.w. 100.12; col. liq.; b.p. 89.4; i.w.; s.al.

pentane, 2, 4-dimethyl- (diisopropyl methane). $(CH_3)_2CHCH_2CH(CH_3)_2$; m.w. 100.12; col. liq.; m.p. −123.4; b.p. 80.8; i.w.; s.al.

pentane, 3, 3-dimethyl- (diethyldimethyl methane). $CH_3CH_2C(CH_3)_2CH_2CH_3$; m.w. 100.12; col. liq.; b.p. 86.0; i.w.; s.al.

pentanedinitrile. See glutaric acid.

pentanedioic acid. See glutaric acid.

pentanedioic acid, 3-oxo-. See acetonedicarboxylic acid.

1, 2-pentanediol (α-n-amyleneglycol). $CH_3CH_2CH_2CH(OH)CH_2OH$; m.w. 104.09; col. liq.; b.p. 211.8; s.w.; s.al.

1, 4-pentanediol (γ-pentylene glycol). $CH_3CHOHCH_2CH_2CH_2OH$; m.w. 104.09; liq.; b.p. 131-3 [15]; s.w.; s.al.

1, 5-pentanediol (pentamethylene

glycol). $CH_3OHCH_2CH_2CH_2OH$; m.w. 104.09; thk. liq.; b.p. 239.4; s.w.; s.al.

2, 3-pentanediol (methylethylethylene glycol; β-n-amylene glycol). CH_3-$CH_2CH(OH)CH(OH)CH_3$; m.w. 104.09; liq.; b.p. 187; s.w.; s.al.

2, 4-pentanediol, 2-methyl- (α, α, α′-trimethyltrimethylene glycol). $(CH_3)_2$-$COHCH_2CHOHCH_3$; m.w. 118.11; liq.; b.p. 196; s.w.; s.al.

2, 4-pentanedione (acetylacetone). CH_3-$COCH_2COCH_3$; m.w. 100.06; col. inflam. liq.; m.p. −23.2; b.p. 139 [746]; s.w.; s.al.

2, 3-pentanedione, 3-oxime (α-isonitrosopropyl methyl ketone). CH_3CO-$C(:NOH)C_2H_5$; m.w. 115.08; leaf. f. lgr.; m.p. 56-7; b.p. 183-7; s.w.; s.al.

1, 4-pentanedione, 1-phenyl-. See valero phenone, γ-keto-.

1, 5-pentanedione, 1, 2, 3, 4, 5-pentaphenyl-. See benzamarone; isobenzamarone.

pentane, 1-ethoxy-. See ether, amyl ether.

pentane, 3-ethyl- (triethylmethane). $(C_2H_5)_3CH$; m.w. 100.12; col. liq.; m.p. −94.5; b.p. 93.3; i.w.; s.al.

pentane, 3-ethyl-2-methyl (diethylisopropylmethane). $(CH_3)_2CH$-$CH(C_2H_5)_2$; m.w. 114.14; col. liq.; b.p. 114.0; i.w.; s.al.

pentane, 3-ethyl-3-methyl- (triethylmethylmethane). $CH_3CH_2C(CH_3)$-$(C_2H_5)CH_2CH_3$; m.w. 114.14; liq.; b.p. 119.0; i.w.

pentane, 1-iodo-. See amyl iodide.

pentane, 1-methoxy- (amyl methyl ether). $CH_3(CH_2)_4OCH_3$; m.w. 102.11; liq.; b.p. 88.5.

pentane, 2-methyl- (dimethylpropylmethane). $(CH_3)_2CH(CH_2)_2CH_3$; m.w. 86.11; col. liq.; b.p. 60; i.w.; s.al.

pentane, 3-methyl- (diethylmethylmethane). $CH_3CH_2CH(CH_3)CH_2$-CH_3; m.w. 86.11; col. liq.; b.p. 64; i.w.; s.al.

pentane, 3-methylene-. See 1-butene, 2-ethyl-.

pentane, 2-methyl-3-methylene-. See 1-butene, 2-ethyl-3-methyl-.

pentane, 4-methyl-1-phenyl-. See benzene, isohexyl-.

pentanenitrile. See valeronitrile.

pentanenitrile, 4-methyl-. See isocapronitrile.

1, 2, 3, 4, 5-pentanepentol. See arabitol.

pentane, pentyloxy-. See amyl ether.

pentane, 1-phenyl-. See benzene amyl-.

pentane, 2-phenyl-. See benzene, (α-methylbutyl)-.

1-pentanethiol (amyl mercaptan). CH_3-$(CH_2)_4SH$; m.w. 104.15; liq.; m.p. −75.7; b.p. 126; i.w.; s.al.

pentane, 2, 2, 4-trimethyl- (isobutyltrimethylmethane; "isoöctane"). $(CH_3)_2CCH_2CH(CH_3)_2$; m.w. 114.14; col. liq.; b.p. 99.3; i.w.; s.al.

pentanoic acid. See valeric acid.

pentanoic acid, 4-methyl-. See isocaproic acid.

pentanoic acid, 4-oxo-. See levulinic acid.

pentanoic anhydride. See valeric anhydride.

1-pentanol (butylcarbinol; pri-n-amyl alcohol). $CH_3(CH_2)_3CH_2OH$; m.w. 88.09; col. liq.; m.p. −78.5; b.p. 137.9; s.al.

2-pentanol (methylpropylcarbinol; sec-actamyl alcohol). $CH_3CH_2CH_2$-$CHOHCH_3$; m.w. 88.09; col. liq.; b.p. 119.28; s.al.

3-pentanol (diethylcarbinol). CH_3CH_2-$CHOHCH_2CH_3$; m.w. 88.09; col. liq.; b.p. 115.6; s.w.; s.al.

1-pentanol acetate. See acetic acid, amyl ester.

2-pentanol, 2, 4-dimethyl- (isobutyldimethylcarbinol). $(CH_3)_2COHCH_2$-$CH(CH_3)_2$; m.w. 116.12; col. liq.; m.p. < −20; b.p. 132.8-3.4; i.w.; s.al.

3-pentanol, 2, 3-dimethyl- (ethylisopropylmethylcarbinol). $(CH_3)_2CH$-$COH(CH_3)CH_2CH_3$; m.w. 116.12; liq.; m.p. < −30; b.p. 138-40 [75]; i.w.; s.al.

3-pentanol, 2, 4-dimethyl- (diisopropylcarbinol). $(CH_3)_2CHCHOH$-$CH(CH_3)_2$; m.w. 116.12; col. liq.; b.p. 140; s.w.; s.al.

3-pentanol, 2, 4-dimethyl-3-phenyl- (diisopropylphenylcarbinol). $[(CH_3)_2$-$CH]_2COHC_6H_5$; m.w. 192.16; yel. liq.; m.p. 60.5; b.p. 157 [60]; s.w.; i.al.

3-pentanol, 3-ethyl- (triethylcarbinol). $(C_2H_5)_3COH$; m.w. 116.12; col. oil; b.p. 140-2; i.w.; s.al.

3-pentanol, 3-ethyl-2-methyl- (diethylisopropylcarbinol. $(CH_3)_2CH$-$COH(C_2H_5)CH_2CH_3$; m.w. 130.14; liq.; b.p. 159-61 [750]; i.w.; s.al.

1-pentanol, 2-methyl-. (2-methyl-2-propylethanol). $CH_3(CH_2)_2CH(CH_3)$-CH_2OH; m.w. 102.11.

1-pentanol, 3-methyl- (active hexyl alcohol). $(C_2H_5)(CH_3)CHCH_2$-CH_2OH; m.w. 102.11; liq.; b.p. 153.7-54.1; i.w.; s.al.

1-pentanol, 4-methyl- (isoamylcarbinol). $(CH_3)_2CH(CH_2)_2CH_2OH$; m.w. 102.11; liq.; b.p. 147-8; s.al.

2-pentanol, 2-methyl- (dimethylpropylcarbinol). $(CH_3)_2COH(CH_2)_2CH_3$; m.w. 102.11; liq.; m.p. 4; b.p. 122.5-3.5; s.w.; s.al.

2-pentanol, 4-methyl- (isobutylmethylcarbinol). $(CH_3)_2CHCH_2CHOHCH_3$; m.w. 102.11; col. liq.; b.p. 131.4; s.al.

3-pentanol, 2-methyl- (ethylisopropylcarbinol). $(CH_3)_2CHCHOHCH_2$-CH_3; m.w. 102.11; liq.; b.p. 127.5 [731]; s.w.; s.al.

3-pentanol, 3-methyl- (diethylmethylcarbinol). $CH_3CH_2COH(CH_3)CH_2$-CH_3; m.w. 102.11; col. liq.; m.p. −22; b.p. 122.8-3.0; s.w.; s.al.

2-pentanol, 4-methyl, acetate (α, γ-dimethylbutyl acetate). CH_3-$CH(OOCCH_3)CH_2CH(CH_3)_2$; m.w. 144.12; col. liq.; b.p. 146.

2-pentanol, 4-methyl, butyrate (α-methylisoamyl butyrate). $(CH_3)_2CH$-$CH_2CH(OOCC_3H_7)CH_3$; m.w. 172.16; col. liq.; m.p. −48; b.p. 183.

2-pentanol, 2, 4, 4-trimethyl-(?) (isodibutol). $(CH_3)_3CCH_2COH(CH_3)_2$; m.w. 130.14; col. liq.; m.p. −20; b.p. 147.5; i.w.; s.al.

2-pentanone (methyl propyl ketone). $CH_3CO(CH_2)_2CH_3$; m.w. 86.08; col. liq.; m.p. −77.8; b.p. 101.7; s.w.; s.al.

3-pentanone (diethyl ketone; sym-dimethylacetone; propione; ethyl ketone). $C_2H_5COC_2H_5$; m.w. 86.08; col. inflam. liq.; m.p. −42; b.p. 101.7; s.al.

3-pentanone, 2, 4-dimethyl- (diisopropyl ketone). $(CH_3)_2CHCOCH(CH_3)_2$; m.w. 114.11; col. liq.; b.p. 123.7; i.w.; s.al.

2-pentanone, 4-hydroxy-4-methyl- (diacetone alcohol). $CH_3COCH_2C(OH)$-$(CH_3)_2$; m.w. 116.09; col. liq.; m.p. −54 to −57; b.p. 164-6; s.w.; s.al.

2-pentanone, 3-methyl- (sec-butyl methyl ketone; asym-ethylmethylacetone). $CH_3COCH(CH_3)CH_2CH_3$; m.w. 100.09; col. liq.; b.p. 118; s.w.; s.al.

2-pentanone, 4-methyl- (isobutyl methyl ketone). $CH_3COCH_2CH(CH_3)CH_3$; m.w. 100.09; col. liq.; sp.gr. $0.8018^{\frac{20}{4}}$; m.p. −84.7; b.p. 118; s.w.; s.al.; used as solvent for nitrocellulose, gums, resins, lacquers.

3-pentanone, 2-methyl- (ethyl isopropyl ketone). $C_2H_5COCH(CH_3)_2$; m.w. 100.09; col. liq.; b.p. 114.5; s.w.; s.al.

2-pentanone, oxime (methyl propyl ketoxime). $CH_3C(:NOH)(CH_2)_2CH_3$; m.w. 101.09; col. liq.; b.p. 168; s.w.; s.al.

pentanoyl chloride. See valeryl chloride.

Pentaryl A. Lt. yel.; sp.gr. 0.970 [20]; b.p. 313-338.

Pentaryl B. Yel.; sp.gr. 0.956 [20]; b.p. 364-404.

Pentaryl C. Lt. straw color; sp.gr. 0.992 [20]; b.p. 291-335.

Pentaryl D. Lt. yel.; sp.gr. 0.958 [20]; b.p. 312-339.

Pentaryl E. Yel.; sp.gr. 1.002 [20]; b.p. 396-434.

Pentaryl F. Lt. yel.; b.p. 337-412.

Pentaryl G. Lt. yel.; sp.gr. 1.095 [20]; b.p. 425-464.

Pentaryl H. Col. to lt. yel.; sp.gr. 0.874 [20]; b.p. 275-295.

pentase. Enzyme which hydrolyzes pentose sugars.

Pentasol. Mixture of isomeric amyl alcohols; solvent used in pyroxylin lacquers.

pentatriacontane (n-pentatriacontane). $CH_3(CH_2)_{33}CH_3$; m.w. 492.56; cr.; m.p. 74.7; b.p. 331 [15].

18-pentatriacontanone (diheptadecyl ketone; stearone). $(C_{17}H_{35})_2CO$; m.w. 506.55; leaf. f. lgr.; m.p. 88; i.w.; s.al.

pentavalent. Having a valence of five.

pentazdienes. Derivatives of NH=NN-HN=NH.

1-pentene (propylethylene; α-n-amylene). $CH_3CH_2CH_2CH:CH_2$; m.w. 70.08; col. liq.; m.p. −138; b.p. 40; i.w.; s.al.

2-pentene (sym-methylethylethylene; β-n-amylene). $CH_3CH_2CH:CHCH_3$; m.w. 70.08; col. inflam. liq.; m.p. −139; b.p. 36.4; i.w.; s.al.

2-pentene-3-carboxylic acid. See crotonic acid, α-ethyl-.

1-pentene, 2, 3-dimethyl- (1-sec-butyl-1-methylethylene). $CH_2:C(CH_3)$-$CH(CH_3)CH_2CH_3$; m.w. 98.11; b.p. 84.1-4.3.

1-pentene, 2, 4-dimethyl- (1-isobutyl-1-methylethylene). $CH_2:C(CH_3)CH_2$-$CH(CH_3)_2$; m.w. 98.11; b.p. 80.9-1.3.

1-pentene, 3, 3-dimethyl-. $CH_2:CH$-$C(CH_3)_2CH_2CH_3$; m.w. 98.11; b.p. 76.9.

2-pentene, 2, 3-dimethyl- (ethyltrimethylethylene). $(CH_3)_2C:C(CH_3)$-CH_2CH_3; m.w. 98.11; liq.; b.p. 95.1; i.w.; s.al.

3-pentene, 2, 3-dimethyl-. $CH_3CH(CH_3)$-$C(CH_3):CHCH_3$; m.w. 98.11; b.p. 86.

2-pentene, 2, 4-dimethyl- (isopropyldimethylethylene). $(CH_3)_2C:CH$-$CH(CH_3)_2$; m.w. 98.11; liq.; b.p. 82.6; i.w.; s.al.

2-pentene, 3, 4-dimethyl- (1-isopropyl-1, 2-dimethylethylene). $CH_3CH:C(CH_3)$-$CH(CH_3)_2$; m.w. 98.11; b.p. 86.2-6.4.

2-pentene, 4, 4-dimethyl-. $CH_3CH:CH$-$C(CH_3)_3$; m.w. 98.11; b.p. 76.0.

1-pentene, 2-ethyl- (1-ethyl-1-propylethylene; 3-methylenehexane). $CH_2:C$-$(C_2H_5)CH_2CH_2CH_3$; m.w. 98.11; b.p. 93.9-4.3.

2-pentene, 3-ethyl- (1, 1-diethyl-2-methylethylene). $CH_3CH:C(C_2H_5)_2$; m.w. 98.11; b.p. 94.8-4.9.

1-pentene, 2-methyl- (1-methyl-1-propyl ethylene). $CH_2:C(CH_3)CH_2CH_2CH_3$; m.w. 84.09; b.p. 61.5-2.0.

1-pentene, 3-methyl- (sec-butylethylene). $CH_2:CHCH(CH_3)CH_2CH_3$; m.w. 84.09; b.p. 53.6-4.0.

1-pentene, 4-methyl- (isobutylethylene). $CH_2:CHCH_2CH(CH_3)_2$; m.w. 84.09; b.p. 53.6-3.9.

2-pentene, 2-methyl- (1-ethyl-1, 2-dimethylethylene). $(CH_3)_2C:CHCH_2$-CH_3; m.w. 84.09; b.p. 67.2-7.5.

2-pentene, 3-methyl- (1-ethyl-1, 2-dimethylethylene). $CH_3CH:C(CH_3)$-CH_2CH_3; m.w. 84.09; b.p. (1) 67.6-8.2. (2) 65.7-6.2.

2-pentene, 4-methyl- (1-isopropyl-2-methylethylene). $CH_3CH:CH$-$CH(CH_3)_2$; m.w. 84.09; b.p. (1) 57.7-8.5, (2) 54.2-5.2.

4-pentenenitrile (allylacetonitrile; allylmethyl cyanide). $CH_2:CHCH_2CH_2$-CN; m.w. 81.06; liq.; b.p. 140; i.w.; s.al.

4-pentenoic acid (allylacetic acid). $CH_2:CHCH_2CH_2COOH$; m.w. 100.06; col. liq.; m.p. < −18; b.p. 189; s.w.; s.al.

2-pentenoic acid, 4-methyl- (β-isopropylacrylic acid; α-isohexenic acid). $(CH_3)_2CHCH:CHCOOH$; m.w. 114.08; liq.; b.p. 108 [12]; s.al.

1-penten 3-ol (ethylvinylcarbinol). $CH_2:CHCHOHCH_2CH_3$; m.w. 86.08; b.p. 114-5; s.w.; s.al.

3-penten, 2-ol (dimethylpropenylcarbinol). $C_6H_{11}OH$; m.w. 100.09; c liq.; b.p. 112; s.w.; s.al.

4-penten-1-ol (β-allylethyl alcoho $CH_2:CHCH_2CH_2CH_2OH$; m.w. 86.0 col. liq.; b.p. 140-2.

4-penten-2-ol (allylmethylcarbino $CH_2:CHCH_2CHOHCH_3$; m.w. 86.0 col. liq.; b.p. 116.4; s.w.; s.al.

4-penten-2-ol, 2-methyl- (allyldimeth carbinol). $CH_2:CHCH_2COH(CH_3$ m.w. 100.09; liq.; b.p. 119.5; s.w.

3-penten-2-one (ethylideneaceton $CH_3CH:CHCOCH_3$; m.w. 84.06; c liq.; b.p. 122-4; s.w.

3-penten-2-one, 4-methyl-. See mesit oxide.

pentine. See pentyne.

pentlandite. A nickel ore containi varying amounts of iron and nick sulfides; [Fe,Ni]S; sp.gr. 4.6-5; bron yel.

pentode. Vacuum tube having filamer plate and three grids.

pentosans. Polysaccharides analogo to starch but yielding chiefly pento sugars upon hydrolysis.

pentose. A sugar containing five carb atoms.

pentoxide. Oxide containing 5 atoms oxygen, e.g. phosphorus pentoxid P_2O_5.

pentyl. See the corresponding *am* derivative.

1-pentyne (1-pentine; n-propylacety ene). $HC:CCH_2CH_2CH_3$; m.w. 68.0 col. liq.; m.p. −95; b.p. 40; i.w.; s.

2-pentyne (2-pentine; ethylmethylacety ene; valerylene). $CH_3C:CCH_2CH$ m.w. 68.06; liq.; m.p. −101; b.p. 5 i.w.; s.al.

2-pentynoic acid (ethylpropiolic aci ethylacetylenecarboxylic acid). CH $CH_3C:CCOOH$; m.w. 98.05; cr.; m. 50; s.w.

peonol (2-hydroxy-4-methoxyacetoph none; resacetophenone 4-methyl ethe paeonol). $CH_3COC_6H_3(OCH_3)OH$ m.w. 166.08; m.p. 50; i.w.; s.al.

pepper. See capsicum.

pepper oil. See oil, pepper.

pepper, red. See capsicum.

peppermint oil. See oil, peppermin

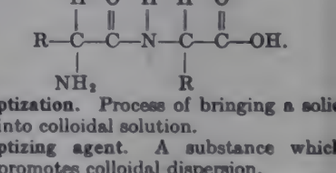
pepsin (pepsinum; peptase; pepsinase A protein-digesting enzyme secrete by certain gastric cells, acting only i an acid medium, converting protein to proteoses and peptones; used i medicine.

pepsin, vegetable. See papain.

peptase. See pepsin.

peptidase. Enzyme which hydrolyse polypeptides to amino-acids, e.g erepsin.

peptide linkage. The CONH linkag resulting from the elimination of molecule of water between the ca boxyl group of one molecule and th amino group of another, e.g.



peptization. Process of bringing a soli into colloidal solution.

peptizing agent. A substance whic promotes colloidal dispersion.

peptone. A product of protein hydrolysis soluble in water, not coagulated by heat, nor precipitated by ammonium sulfate.

per-. Prefix denoting an increase i oxygen content over the normal acid o salt, e.g. perchloric acid ($HClO_4$)

Per-Clene. Perchlorethylene.

perbenzoic acid (benzoyl hydroperoxide) $C_6H_5COO_2H$; m.w. 138.05; leaf.; m.p 42; s.w.; s.al.

Perbunan. Synthetic rubber resistant t aliphatic hydrocarbons, oils and grease

percentage humidity. Percentage ob tained by dividing weight of wate carried by 1 lb. dry air at a particula temperature and pressure by the weight of water 1 lb. dry air could carry if saturated at same temperatur

and pressure.

perchlorate. See chlorate, per-.

perchloric acid. See chloric acid, per-.

perchloromethyl formate. See diphosgene.

percolation. Continuous extraction.

percylite. A mineral, $PbCl_2 \cdot CuO \cdot H_2O$; cub., blue; sp.gr. 4.675-4.71; hardness 2.0-2.5.

pereirine. $C_{19}H_{24}N_2O$; m.w. 296.20; br. amor. powd.; m.p. 118-24; i.w.; s.al.

perfect engine. A theoretically perfect engine is one which, working without frictional losses, obtains from its cycle of operations the maximum work obtainable.

perfect fluid. Ideal theoretical fluid without viscosity.

perfume. Volatile fluid of pleasant odor.

perfume concrete. See concrete, perfume.

Pergut. Chlorinated rubber used in anti-corrosion paints. See Alloprene.

Perhydrit. Stable solidified hydrogen peroxide.

Perhydrol. See hydrogen peroxide.

Peri acid, phenyl (1-naphthylamine, phenyl-, 8-sulfonic acid). $C_{10}H_6(NHC_6H_5)(SO_3H)$; m.w. 299.17; greenish cryst. paste.; s.w.; used in manufacture of azo dyes.

periclase. A mineral, MgO; cub., sp.gr. 3.64-3.674; hardness 5.5-6.0.

pericycloid. Curve traced by a point on the circumference of a circle which rolls on the circumference of a fixed circle.

peridot. See olivine.

perilla oil. See oil, perilla.

perimeter. Outer boundary of a plane figure.

period. In uniform circular motion, the time for one complete revolution; in oscillatory motion, the time of a complete oscillation.

periodic acid. See iodic acid, per-.

periodic function. Function whose values go thru repeated cycles at regular intervals.

periodic law. Properties of elements are periodic functions of their atomic numbers.

periodic system, new. Arrangement of the elements on the basis of their x-ray spectra.

periodic table. A grouping or classification of the elements into families or series of similar properties, in the order of increasing atomic numbers.

periphery. Circumference; outer edge or boundary.

peristaltin. $C_{14}H_{18}O_8$; m.w. 314.14; glucoside from cascara sagrada; used in medicine.

perithecium. An ascus-bearing fruiting body.

peritrichous. Having flagella around the cell.

Perkin reaction. Refluxing at 180° C. of benzaldehyde, acetic anhydride and anhydrous sodium acetate to produce cinnamic acid; the elimination of water between a carbonyl oxygen group of an aldehyde and the methyl group of sodium acetate.

permalloy. An alloy of nickel (78.23%), and iron (21.35%), having a high magnetic permeability.

permanent gas. Gas with extremely low critical temperature, e.g. hydrogen; gas not readily liquefied.

permanent green. See Guignet green.

permanent hard salts. See salinity, secondary.

permanent hard water. See hard water, permanent.

permanent set. Deformation which does not disappear when external force is removed.

permanganate. See manganate, per-.

permanganic acid. See manganic acid, per-.

Permaplastic. Synthetic tar-acid resin used for molding and laminating.

Permatol A. Five per cent penta chlorophenol in oil used in preservation of dry lumber such as sash, doors, frames, etc.

permeability. The ratio of the magnetic induction in a body to the magnetic flux of the inducing field, a measure of the tendency of a body to attract and concentrate lines of force within itself; equal to 1 in nonmagnetic bodies, greater than 1 in paramagnetic and less than 1 in diamagnetic bodies.

permeance. In a portion of a magnetic circuit between two equipotential surfaces, the ratio of the flux thru any cross-section to the magnetic potential difference between the surfaces when taken within the portion under consideration; reciprocal of reluctance.

permutation. Arrangement of any determinate number of letters or objects in all possible orders, one after the other.

Permutite. An artificial zeolite, or sodium aluminum silicate, used in the softening of water, which acts by replacing the calcium in the water by sodium.

Permutoid reaction. Reaction in micellar compounds, in which the entire crystal reacts as a whole, without breaking its junctions.

Perone. Purified 100 volume hydrogen peroxide used in food manufacture.

peronine (morphine benzylether hydrochloride). $C_{17}H_{17}NO(OH)O\text{-}C_7H_7 \cdot HCl$; m.w. 411.86; wh. cryst.; s.w.; s.al.; used in medicine.

perovskite. A mineral, $CaO \cdot TiO_2$; cub., yel., redsh. br., grayish blk.; sp.gr. 3.95-4.039; hardness 5.5.

peroxide. Oxide which yields hydrogen peroxide when treated with acid, e.g. BaO_2, barium peroxide.

peroxide, dibenzoyl. See benzoyl peroxide.

perseitol (d-mannoheptitol; perseite). $C_7H_9(OH)_7$; m.w. 212.12; col. need.; m.p. 188; s.al.

Persian berries. See frangula.

persorption. Term applied to the taking up indifferently of any molecules (small enough to enter and permeate the crystal) in the interstices, ultrapores, or spaces within the crystal lattice, which are not already filled with the material of the crystal itself.

Persoz's reagent. Used in the determination of silk in wool; 50% $ZnCl_2$ solution with about 2% ZnO added; dissolves silk at 45° C., but not wool.

Perspex. An acrylate resin, thermoplastic, available in colorless transparent form, of good machining, molding and extruding properties, resistant to oils.

persulfate. See sulfate, per-.

persulfuric acid. See sulfuric acid, per-.

Peru balsam (Peruvian balsam; Indian balsam; China oil; black balsam). Material obtained from toluifera pereirae; s.g. 1.140-1.150; dark, molasses-like liquid; s.al.; used in medicine, perfumery.

pervaporation. Evaporation process utilizing a semi-permeable sac suspended in air, containing the solution.

perylene. $C_{20}H_{12}$; m.w. 252.10; m.p. 264; yel.; i.w.

petalite. A mineral, $Li_2O \cdot Al_2O_3 \cdot 8SiO_2$; monocl., col., wh., gray; rar. redsh. or grnsh.; sp.gr. 2.386-2.465; hardness 6.0-6.5; a source of lithia.

petit-grain oil. See oil, petit-grain.

Petrex. Synthetic, resinous, polybasic acid, m.w. 215; m.p. 40-50.

Petrex resin. One of a series of modified alkyd Petrex acid resins.

Petroacid. Mixture of fatty acids formed from oxidation of petroleum fractions.

Petrobenzol. Petroleum solvent; boiling range 61.1-96.1° C.

Petrohol. Isopropyl alcohol.

petrol. See motor spirit.

petrolatum (petroleum jelly, mineral jelly, vaseline). A purified mixture of semi-solid hydrocarbons; light yel. to amber, amorp.; sp.gr. 0.820-0.850; m.p. 45-48; s.al., s.w.; used in manufacture of polishes, soaps, leather greases, salves, ointments, and modeling clay.

petrolene content. The portion of mineral rubber extracted with petroleum ether.

petrolenes. Constituents of asphalt, soluble in carbon disulfide, volatile when heated up to 325° F. for 7 hours; malthenes, hexane-soluble bitumen constituents.

petroleum (rock oil; mineral oil; crude oil; earth oil). A hydrocarbon mixture obtained from the earth; sp.gr. 0.78-0.97; yel.-black; source of gasoline, benzine, petrolateum, etc.

petroleum asphalt. A mixture of hydrocarbons and complex organic compounds derived from still residues when asphalt-base petroleum is refined.

petroleum coke. Carbonaceous solid residue left in stills which have been overheated.

petroleum ether (canadol, ligroin). The 40-70° C. fraction distilled from petroleum; sp.gr. 0.635-0.660; containing low paraffin hydrocarbons.

petroleum jelly. See petrolatum.

petroleum naphtha. See naphtha, petroleum.

petroleum resin. Product obtained by oxidation or controlled polymerization of certain distillates in petroleum cracking.

petroleum sludge acid. See sulfonic acid, petroleum.

petroleum solvent. Solvent obtained from low-boiling petroleum distillates, e.g. petroleum ether.

petroleum spirits (white spirits). Refined petroleum distillate having flash point not below 70° F.; used as thinner in paints and varnishes. In Great Britain minimum flash point is 32° F.

petroleum sulfonic acid. See sulfonic acid, petroleum.

petroleum thinner. Low boiling petroleum solvents used in paints, lacquers, etc.

petroleum, topped. Petroleum from which additional volatile constituents have been removed.

Petropol. Synthetic petroleum resin.

petzite. $(Au \cdot Ag)_2Te$; s.g. 8.72-9.02; steel-gr. to iron-bl.

peucedanin (imperatorin). $C_{16}H_{16}O_4$; m.w. 272.12; rhomb. pr.; m.p. 75; i.w.; s.al.

pewter. An easily fusible alloy used largely for casting decorative objects where strength is not an important consideration. Its composition is: Sn 74-89, Pb 0-20, Sb 0-7.6, Cu 0-3.5, Zn.

pH. Logarithm (base 10) of the reciprocal of the hydrogen ion concentration in gram-molecules per liter; water accordingly is of pH = 7, acidic solutions of pH less than 7, and basic solutions higher than 7.

phacellite. See kaliophilite.

phagocyte. A white blood corpuscle which attacks and digests bacteria.

pharmacognosy. Study of sources and chemical and physical properties of drugs.

pharmacology. Study of the action of drugs on the organism.

pharmacosiderite. A mineral, $3Fe_2O_3 \cdot 2As_2O_3 \cdot 13H_2O$; monocl., grn., yelsh. br.; sp.gr. 2.9-3.0; hardness 2.5.

pharmacy. The study of the preparation of drugs and medicines.

Pharmagel. Grade of pure gelatin used as an emulsifier.

phase. Any portion of a system which is homogeneous throughout, which is bounded by a surface, and which may be mechanically separated from the other portions (phases); maximum, zero, or relative value of an electric wave at a given time instant.

phase, quarter. See phase, two.

phase rule. Principle for interpreting and classifying equilibria between phases: the number of phases present in equilibrium plus the number of degrees of freedom equals the number of components of the system plus 2.

phase, single. Term applied to single, independent alternating current circuit.

phase space (extension-in-phase). Ideal, multidimensional space with coordinates representing variables necessary to specify state of a substance or system.

phase, three. Term applied to three alternating current circuits or windings having a difference in phase of 120 electrical degrees.

phase, two (quarter phase). Term applied to two windings or circuits having a phase difference of 90 electrical degrees.

phase wave. See de Broglie wave.

phaseomannitol. See i-inositol.

α-phellandrene (1, 5-p-menthadiene; 5-isopropyl-2-methyl-1, 3-cyclohexadiene). $C_{10}H_{16}$; m.w. 136.12; liq.; b.p. 175; i.al.

β-phellandrene (1 [7], 2-p-menthadiene; 3-isopropyl-6-methylenecyclohexene). $C_{10}H_{16}$; m.w. 136.12; liq.; b.p. 171.2; i.w.; i.al.

phen-. Prefix indicating phenol and benzene derivatives.

Phenac. A modified phenolic resin.

phenacetin. See p-acetophenetide.

phenacite. A mineral, $2BeO \cdot SiO_2$; tricl., col., yel., red, br.; sp.gr. 2.944-3.041; hardness 7.5-8.0.

phenacyl alcohol. See acetophenone, α-hydroxy-.

phenacyl brom' See acetophenone, α-bromo-.

phenacyl chloride. See acetophenone, α-chloro-.

phenacyl, p-phenyl, acetate. See acetophenone, α-hydroxy-p-phenyl-, acetate.

Phenalin. A phenol formaldehyde cast resin, thermosetting, available in transparent, translucent and opaque, colored and colorless forms, of good machining properties, resistant to ketones, esters, hydrocarbons and oils.

phenanthrahydroquinone. See 9, 10-phenanthrenediol.

phenanthraquinone. See phenanthrenequinone.

phenanthrene. $C_{14}H_{10}$; m.w. 178.08; col. monocl. leaf. f.al.; m.p. 100; b.p. 340.2; i.w.; s.al.

phenanthrene, amino- (phenanthrylamine).

phenanthrene, ?-benzyl-. $C_6H_5CH_2\text{-}C_{14}H_9$; m.w. 268.12; need. f. bz. or leaf. f.al.; m.p. 91-2; i.w.; s.al.

phenanthrene, 9, 10-dihydro-9, 10-dioxo-. See phenanthrenequinone.

phenanthrene, 3, 4-dimethoxy- (morphol dimethyl ether). $C_{14}H_8(OCH_3)_2$; m.w. 238.11; leaf. f.al. +w.; m.p. 44; b.p. 298-303 ^{113}; i.w.; s.al.

phenanthrene, 9, 10-dimethyl-. $C_{14}H_8(CH_3)_2$; m.w. 206.11; pr.f.dil. ac.a.; m.p. 139; s.al.

3, 4-phenanthrenediol. See morphol.

9, 10-phenanthrenediol (phenanthrahydroquinone). $C_{14}H_8(OH)_2$; m.w. 210.08; col. need.; m.p. 147-8; s.w.; s.al.

phenanthrene, 9, 10-diphenyl-. $C_{14}H_8(C_6H_5)_2$; m.w. 330.14; col. need. f.al.; m.p. 235; i.w.; s.al.

phenanthrene, hydroxy-. See phenanthrol.

phenanthrene, 7-isopropyl-1-methyl-. See retene.

phenanthrene, 1-methyl-. $CH_3C_{14}H_9$; m.w. 192.09; leaf. f.al.; m.p. 123; i.w.; s.al.

phenanthrene, 3-methyl-. $CH_3C_{14}H_9$; m.w. 192.09; cr.f.al.; m.p. 65; i.w.; s.al.

phenanthrenequinone (9, 10-dihydro-9, 10-dioxophenanthrene; phenanthraquinone). $C_6H_4COCOC_6H_4$; m.w. 208.06; yel.-or. need.; m.p. 207; b.p. 360; s.w.; s.al.

phenanthrenequinone, 2, 7-dinitro-.

$NO_2C_6H_3(CO)_2C_6H_3NO_2$; m.w. 298.06; yel. gold need. f.ac.a.; m.p. 301-3; i.w.; s.al.

phenanthrenequinone, 2-nitro-. NO_2-$C_6H_3(CO)_2C_6H_4$; m.w. 253.06; yel. leaf. f.ac.a.; m.p. 257; i.al.

phenanthrene, 3, 4, 5-trihydroxy-. See 3, 4, 5-phenanthrenetriol.

3, 4, 5-phenanthrenetriol (3, 4, 5-trihydroxyphenanthrene). $C_{14}H_7(OH)_3$; m.w. 226.08; leaf. f.w.; m.p. 148; i.w.; s.al.

2-phenanthrol (2-hydroxyphenanthrene). $C_{14}H_9OH$; m.w. 194.08; leaf. f.dil.al.; m.p. 168; s.w.; s.al.

3-phenanthrol (3-hydroxyphenanthrene). $C_{14}H_9OH$; m.w. 194.08; need. f.dil.al.; m.p. 122; i.w.; s.al.

4-phenanthrol (4-hydroxyphenanthrene). $C_{14}H_9OH$; m.w. 194.08; cr.; m.p. 108; i.w.; s.al.

9-phenanthrol. $C_{14}H_9OH$; m.w. 194.08; col. need. f.lgr.; m.p. 153; i.w.; s.al.

2-phenanthrylamine (2-aminophenanthrene). $C_{14}H_9NH_2$; m.w. 193.09; lt. yel. cr. f. lgr.; m.p. 85; i.w.; s.al.

3-phenanthrylamine (3-aminophenanthrene). $C_{14}H_9NH_2$; m.w. 193.09; cr. f. lgr.; m.p. α 143, β 87.5; s.w.; s.al.

9-phenanthrylamine (9-aminophenanthrene). $C_{14}H_9NH_2$; m.w. 193.09; lt. yel. pr.; m.p. 137-8; s.al.

phenate. See phenolate.

phenazine. $C_6H_4NC_6H_4N$; m.w. 180.08; yel. need.; m.p. 171; s.w.

phenazine, 5, 10-dihydro- (hydrazophenylene). $C_6H_4NHC_6H_4NH$; m.w. 182.09; rhomb. leaf.; i.w.; s.al.

phenazine, 2-methyl-. $C_6H_4{:}N_2{:}C_6H_3$-CH_3; m.w. 194.09; need.; m.p. 117; s.w.; s.al.

2 (10)-phenazinone, 10-phenyl-. See aposafranone.

phenazone. See antipyrine.

phenazothionium chloride, 3, 9-bisdimethylamino-. See methylene blue.

phene. See benzene.

Phenester. A solid modified coumarone-indene resin containing uncondensed phenolic bodies; m.p. 95-105; i.w.; it possesses a slightly acidic reaction and consequent valuable retarding power over jelling of china wood oil in varnish cooking.

phenethyl alcohol (2-phenylethanol; benzylcarbinol). $C_6H_5CH_2CH_2OH$; m.w. 122.08; col. liq.; sp.gr. 1.024; m.p. −27; b.p. 219-21; s.al.

phenethylamine (β-phenylethylamine; 1-amino-2-phenylethane). $C_6H_5CH_2$-CH_2NH_2; m.w. 121.09; liq.; b.p. 195; s.w.; s.al.

phenethylamine, p-hydroxy-. See tyramine.

phenethylamine, p-hydroxy-N, N-dimethyl-. See hordenine.

m-phenetidine (m-ethoxyaniline). $C_2H_5OC_6H_4NH_2$; m.w. 137.09; liq.; b.p. 248; s.w.; s.al.

o-phenetidine (o-ethoxyaniline; o-aminophenetole). $C_2H_5OC_6H_4NH_2$; m.w. 137.09; liq.; m.p. < −21; b.p. 229.2; s.w.; s.al.

p-phenetidine (p-ethoxyaniline). C_2H_5O-$C_6H_4NH_2$; m.w. 137.09; liq.; m.p. 2.4; b.p. 254.2; s.w.; s.al.

phenetidine, N-acetyl-. See acetophenetide.

p-phenetidine, N, N-diacetyl-. See diacetanilide, p-ethoxy-.

p-phenetidine, 2-nitro- (4-ethoxy-2-nitroaniline; 4-amino-3-nitrophenetole). $NO_2(C_2H_5O)C_6H_3NH_2$; m.w. 182.09; red pr.f.al.; m.p. 112-3; s.al.

phenetole (ethoxybenzene; ethyl phenyl ether). $C_2H_5OC_6H_5$; m.w. 122.08; col. liq.; m.p. −30.2; b.p. 172; i.w.; s.al.

phenetole, o, m, or p-amino-. See phenetidine.

phenetole, azodi-. See azophenetole.

phenetole, β-bromo- (β-bromoethyl phenyl ether). $C_6H_5OCH_2CH_2Br$; m.w 200.99; m.p. 35; s.w.; s.al.

phenetole, o-chloro- (1-chloro-2-ethoxybenzene; o-chlorophenyl ethyl ether). $ClC_6H_4OC_2H_5$; m.w. 156.53; col. liq.; b.p. 208; s.al.

phenetole, d-chloro- (1-chloro-4-ethoxybenzene; p-chlorophenyl ethyl ether). $ClC_6H_4OC_2H_5$; m.w. 156.53; cr.; m.p. 21; b.p. 212; s.al.

phenetole, m-nitro-. $NO_2C_6H_4OC_2H_5$; m.w. 167.08; yel. need.; m.p. 34; b.p. 284; i.w.; s.al.

phenetole, o-nitro- (ethyl o-nitrophenyl ether). $NO_2C_6H_4OC_2H_5$; m.w. 167.08; yel. liq.; m.p. 2.1; b.p. 268; i.w.; s.al.

phenetole, p-nitro-. $NO_2C_6H_4OC_2H_5$; m.w. 167.08; col. monocl. pr.f.et.; m.p. 60; b.p. 283; i.w.; s.al.

Phenex. Aldehyde-amine rubber accelerator.

phenmiazine. See quinazoline.

phenobarbital (5-ethyl-5-phenylbarbituric acid; luminal). NHCON-HCOC(C_2H_5)(C_6H_5)CO; m.w. 232.11; wh. lust.; m.p. 174; s.w.; s.al.

phenocoll (a-amino-p-acetophenetide). $NH_2CH_2CONHC_6H_4OC_2H_5$; m.w. 194.13; col. need.; m.p. anh. 100.5; s.w.; s.al.

phenol (carbolic acid; hydroxybenzene). C_6H_5OH; m.w. 94.05; col. rhomb. need.; m.p. 41; b.p. 182; s.w.; s.al.

phenol coefficient. Minimal concentration of phenol that kills a microorganism in a definite time, divided by the concentration of the other disinfectant required to destroy the same organism in the same length of time; a numerical expression of disinfecting value.

phenol, acetamido-. See acetanilide, hydroxy-.

phenol, acetate (phenyl acetate; acetylphenol). $CH_3COOC_6H_5$; m.w. 136.06; col. liq.; b.p. 195.5; s.al.

phenol, acetyl-. See phenol, acetate.

phenol, acetylamino-. See acetanilide, hydroxy-.

phenol, o-(acetylmethylamino)-. See acetanilide, o-hydroxy-N-methyl-.

phenol, p-allyl-. See chavicol.

phenol, m-amino- (m-hydroxyaniline). $NH_2C_6H_4OH$; m.w. 109.06; col. pr. f. tol.; m.p. 122-3; s.al.

phenol, o-amino- (o-hydroxyaniline). $NH_2C_6H_4OH$; m.w. 109.06; col. rhomb. pl. or need.; m.p. 170.

phenol, p-amino- (p-hydroxyaniline; rodinal). $NH_2C_6H_4OH$; m.w. 109.06; wh. leaf.; m.p. 185 with decomp.; i. cold w.; used in sulfur dyes, photographic developers.

phenol, 2-amino-4, 6-dinitro-. See picramic acid.

phenol, p-(β-aminoethyl)-. See tyramine.

phenol, o-amino-hydrochloride. C_6H_4-$OHNH_2HCl$; m.w. 145.52; wh. cryst. powd.; s.w.; s.al.; used in dyeing fur and hair and in the manufacture of azo and sulfur dyes.

phenol, p-amino-, hydrochloride. C_6H_4-$OH{\cdot}NH_2{\cdot}HCl$; m.w. 145.52; gr. to wh. cryst. powd.; s.w.; used in photographic developers, dyes, pharmaceuticals.

phenol, p-aminomethyl-, sulfate (metol). $(C_6H_4[OH]NHCH_3)_2{\cdot}H_2SO_4$; m.w. 344.23; wh. cryst. powd.; m.p. 250-60 d.; s.w.; s.al.; a photographic developer; used in dyeing hair and furs.

phenol, 2-amino-3-nitro-. $NH_2(NO_2)$-C_6H_3OH; m.w. 154.06; red. need.; m.p. 216-7; s.w.

phenol, 2-amino-4-nitro-. $NH_2(NO_2)$-C_6H_3OH; m.w. 154.06; or. pr.; m.p. 143; s.w.; s.al.

phenol, 2-amino-5-nitro-. $NH_2(NO_2)$-C_6H_3OH; m.w. 154.06; br. need. f.w.; m.p. 202; s.al.

phenol, 2-amino-6-nitro-. $NH_2(NO_2)$-C_6H_3OH; m.w. 154.06; red need. f.al.; m.p. 111; s.w.; s.al.

phenol, 3-amino-4-nitro-. $NH_2(NO_2)$-C_6H_3OH; m.w. 154.06; or. need.; m.p. 185-6; s.w.; s.al.

phenol, 3-amino-5-nitro-. $NH_2(NO_2)$-C_6H_3OH; m.w. 154.06; yel. cr.; m.p. 165; s.al.

phenol, 4-amino-2-nitro-. $NH_2(NO_2)$-C_6H_3OH; m.w. 154.06; red need. f.al.; m.p. 131.

phenol, 4-amino-3-nitro-. $NH_2(NO_2)$-C_6H_3OH; m.w. 154.06; red. pr. f. et.; m.p. 154.; s.w.; s.al.

phenol, 5-amino-2-nitro- (3-amino-6-nitrophenol). $NH_2(NO_2)C_6H_3OH$; m.w. 154.06; or.-yel. need.; m.p. 163.

1-phenol-2-amino-6-nitro-, 4-sulfonic acid. $HO(NH_2)(NO_2)C_6H_2SO_3H$; m.w. 234.12; s.w.

phenol, m-aminothio- (3-aminobenzenethiol; m-aminophenyl mercaptan; m-mercaptoaniline). $NH_2C_6H_4SH$; m.w. 125.12; oily liq.; b.p. 234.

phenol, o-aminothio- (2-aminobenzenethiol; o-aminophenyl mercaptan; o-mercaptoaniline). $NH_2C_6H_4SH$; m.w. 125.12; need.; m.p. 26; b.p. 234.

phenol, p-aminothio- (4-aminobenzenethiol; p-aminophenyl mercaptan; p-mercaptoaniline). $NH_2C_6H_4SH$; m.w. 125.12; wh. gran. cr. mass; m.p. 46; b.p. 140-5 [16]; s.w.; s.al.

phenol, m-amoxy- (resorcinol monoamyl ether). $CH_3(CH_2)_4OC_6H_4OH$; m.w. 180.12; b.p. 104-6 [4].

phenol, o-amoxy- (pyrocatechol monoamyl ether). $CH_3(CH_2)_4OC_6H_4OH$; m.w. 180.12; b.p. 104-6 [4].

phenol, p-amoxy- (hydroquinone monoamyl ether). $CH_3(CH_2)_4OC_6H_4OH$; m.w. 180.12; m.p. 49-50.

phenol, p-amyl-. $CH_3(CH_2)_4C_6H_4OH$; m.w. 164.12; col. liq.; m.p. <0; b.p. 262; s.w.; s.al.

phenol, 4-t-amyl-2-chloro-. A water-white liquid; b.p. 253-259.

phenol, p-tert-amyl- (p-[a, a-dimethylpropyl]phenol). $CH_3CH_2C(CH_3)_2$-C_6H_4OH; m.w. 164.12; col. need.; m.p. 92-3; b.p. 248-50; s.w.; s.al.

phenol, p-tert-amyl-, acetate. C_5H_{11}-$C_6H_4OOCCH_3$; m.w. 206.14; col.; sp.gr. 0.996 [20]; b.p. 253-272.

phenol, m-anilino- (m-hydroxydiphenylamine). $C_6H_5NHC_6H_4OH$; m.w. 185.09; leaf. f.w.; m.p. 82; b.p. 340; s.w.; s.al.

phenol, o-anilino- (o-hydroxydiphenylamine). $C_6H_5NHC_6H_4OH$; m.w. 185.09; pr.f.w.; m.p. 69-70; b.p. 180-9 [20]; s.w.; s.al.

phenol, p-anilino- (p-hydroxydiphenylamine). $C_6H_5NHC_6H_4OH$; m.w. 185.09; leaf. f.w.; m.p. 70; b.p. 330; s.w.; s.al.

phenolate (phenate, phenoxide). Compound in which the hydrogen of a phenolic hydroxy- group is substituted by a metal.

phenol, azodi-. See azophenol.

phenol, p-benzalamino- (N-benzal-p-hydroxyaniline). $C_6H_5CH{:}NC_6H_4$-OH; m.w. 198.10; leaf. f.dil.al.; m.p. 183; i.w.; s.al.

phenol, o-benzyl-. $C_6H_5CH_2C_6H_4OH$; m.w. 184.09; m.p. 21; b.p. 312; s.w.; s.al.

phenol, p-benzyl- (p-hydroxydiphenylmethane). $C_6H_5CH_2C_6H_4OH$; m.w. 184.09; col. need. f.al.; m.p. 83-4; b.p. 320-2; s.w.; s.al.

phenol, p-benzylamino-. $C_6H_5CH_2NH$-C_6H_4OH; m.w. 200.12; leaf.; m.p. 90; i.w.; s.al.

phenol, benzylaminothio-. See benzothiazole, 2-phenyl-.

phenol, m-bromo-. BrC_6H_4OH; m.w. 172.96; leaf.; m.p. 33; b.p. 263.5; s.w.; s.al.

phenol, o-bromo-. BrC_6H_4OH; m.w. 172.96; col. oily liq.; m.p. 5.6; b.p. 194-5; s.w.; s.al.

phenol, p-bromo-. BrC_6H_4OH; m.w. 172.96; tetr.; m.p. 63.5; b.p. 238; s.al.

phenol, 2-bromo-4-phenyl-. See biphenyl, 3-bromo-4-hydroxy-.

phenol, m-butoxy- (resorcinol monobutyl ether). $CH_3(CH_2)_3OC_6H_4OH$; m.w. 166.11; b.p. 130 [4].

phenol, o-butoxy- (pyrocatechol monobutyl ether). $CH_3(CH_2)_3C_6H_4OH$; m.w. 166.11; b.p. 231-4.

phenol, p-butoxy- (hydroquinone monobutyl ether). $CH_3(CH_2)_3OC_6H_4OH$; m.w. 166.11; m.p. 64-5.

phenol, m-butyl-. $C_4H_9C_6H_4OH$; m.w. 150.11; col.; b.p. 247-9 [755]; s.w.; s.a.

phenol, o-butyl-. $C_4H_9C_6H_4OH$; m.w. 150.11; col.; b.p. 234-7; s.w.; s.al.

phenol, p-butyl-. $C_4H_9C_6H_4OH$; m.w. 150.11; col. liq.; b.p. 246-50 [751]; s.w. s.al.

phenol, p-sec-butyl-. $C_2H_5(CH_3)CH$-C_6H_4OH; m.w. 150.11; col. need. m.p. 59; b.p. 240.5 [760]; s.w.; s.al.

phenol, p-tert-butyl- (4-[a, a-dimethylethyl] phenol). $(CH_3)_3CC_6H_4OH$; m.w. 150.11; need. f.w.; m.p. 99 b.p. 236-8; s.w.; s.al.

phenol, m-chloro- (1-chloro-3-hydroxybenzene). ClC_6H_4OH; m.w. 128.50 col. liq. or need.; m.p. 32.8; b.p. 214 s.al.

phenol, o-chloro- (1-chloro-2-hydroxybenzene). ClC_6H_4OH; m.w. 128.50 col. liq.; m.p. a, 7; β, 0; γ, 4.1; b.p. 175.6; s.al.

phenol, p-chloro- (1-chloro-4-hydroxybenzene). ClC_6H_4OH; m.w. 128.50 need. f.al.; m.p. 43; b.p. 217; s.al.

phenol, 2-chloro-4-nitro-. $Cl(NO_2)C_6H_2$-OH; m.w. 173.50; lng. col. need. f.al. or w.; m.p. 111; s.w.; s.al.

phenol, 2-chloro-5-nitro- (6-chloro-3-nitrophenol). $Cl(NO_2)C_6H_3OH$; m.w. 173.50; yel. need. f.w.; m.p. 118-9 s.w.

phenol, 4-chloro-2-nitro-. $Cl(NO_2)$-C_6H_3OH; m.w. 173.50; yel. monocl. need. f.al.; m.p. 87; s.w.; s.al.

phenol, 5-chloro-2-nitro- (3-chloro-6-nitrophenol). $Cl(NO_2)C_6H_3OH$; m.w. 173.50; yel. pr. f.w.; m.p. 38.9; s.w., s.al.

phenol, 6-chloro-2-phenyl- (6-chlor orthoxenol). $C_6H_5{\cdot}C_6H_3ClOH$; m.w. 204.5; colorless to light straw colored viscous liquid; b.p. 315-317; sp.gr. 1.24 $\frac{25}{4}$; m.p. 6.0; i.w., s.alk.; germicide and fungicide.

phenol, p-cyclohexyl-. $C_6H_{11}C_6H_3OH$; m.w. 176.12; col. need.; m.p. 133; i.w.; s.al.

phenol, 2, 4-diamino-. $(NH_2)_2C_6H_3OH$; m.w. 124.08; col. leaf.; s.al.

phenol, 2, 5-diamino-. $(NH_2)_2C_6H_3OH$; m.w. 124.08; need.; m.p. 68; s.w.

phenol, 3, 4-diamino-. $(NH_2)_2C_6H_3OH$; m.w. 124.08; cr.

phenol, 3, 5-diamino-. $(NH_2)_2C_6H_3OH$; m.w. 124.08; pr.; m.p. 168-70; s.w.

phenol, 2, 4-diamino, dihydrochloride (diamol amidol [one form]). $(NH_2)_2$-$C_6H_3OH{\cdot}2HCl$; m.w. 197.01; gray-wh. cr.; m.p. 168-70; s.w.; s.al.

phenol, dibenzyl-. $C_6H_3(OH)(C_6H_5$-$CHCO_2)_2$; viscous, fluorescent oil; m.w. 360.13; b.p. 256 at 10 mm. and 200 at 1 mm.; i.w., s.al.; used in organic synthesis.

phenol, 2, 4-dibromo-. $Br_2C_6H_3OH$; m.w. 251.86; col. need.; m.p. 40; b.p. 177 [17]; s.al.

phenol, 2, 6-dibromo-. $Br_2C_6H_3OH$; m.w. 251.36; col. need. f.h.w.; m.p. 56-7; b.p. 162 [21]; s.w.; s.al.

phenol, 2, 6-dibromo-4-nitro-. $Br_2(NO_2)$-C_6H_2OH; m.w. 296.86; yel. pr.f.al.; m.p. 144; s.w.; s.al.

phenol, 2, 3-dichloro-. $Cl_2C_6H_3OH$; m.w. 162.95; col. cr. f. pet. eth.; m.p. 57; s.al.

phenol, 2, 4-dichloro-. $Cl_2C_6H_3OH$; m.w. 162.95; col. need. f.bz.; m.p. 45; b.p. 210; s.w.

phenol, 2, 5-dichloro-. $Cl_2C_6H_3OH$; m.w. 162.95; col. pr. f. pet. eth.; m.p. 58; b.p. 211 [744]; s.w.; s.al.

phenol, 2, 6-dichloro-. $Cl_2C_6H_3OH$; m.w. 162.95; col. need.; m.p. 67; b.p. 219-20; s.al.

phenol, 3, 4-dichloro-. $Cl_2C_6H_3OH$; m.w. 162.95; col. need. f. bz.; m.p. 68; b.p. 253.5 [767].

phenol, 3, 5-dichloro-. $Cl_2C_6H_3OH$;

m.w. 162.95; m.p. 68; b.p. 233-4; s.al.

phenol, 2, 6-dichloro-4-nitro-. $Cl_2(NO_2)$-C_6H_2OH; m.w. 207.95; yel. monocl. leaf. f.al.; m.p. 122; s.w.; s.al.

phenol, m-diethylamino-. $(C_2H_5)_2N$-C_6H_4OH; m.w. 165.13; rhomb. f. CS_2 + lgr.; m.p. 78; b.p. 278; s.w.; s.al.

phenol, 2, 4-diiodo-. $I_2C_6H_3OH$; m.w. 345.87; col. need. f.w.; m.p. 72; b.p. 100; s.w.; s.al.

phenol, 2, 6-diiodo-. $I_2C_6H_3OH$; m.w. 345.87; col. cr.; m.p. 68; s.al.

phenol, 2, 3-dimethoxy- (pyrogallol 1, 2-dimethyl ether). $(CH_3O)_2C_6H_3OH$; m.w. 154.08; col. liq.; b.p. 233-4.

phenol, 2, 6-dimethoxy- (pyrogallol 1, 3-dimethyl ether). $(CH_3O)_2C_6H_3OH$; m.w. 154.08; monocl. f.w.; m.p. 55; b.p. 258; s.al.

phenol, 3, 5-dimethoxy- (phloroglucinol dimethyl ether). $(CH_3O)_2C_6H_3OH$; m.w. 154.08; cr.; m.p. 36-8; b.p. 172-5 ^{17}.

phenol, dimethyl-. See xylenol.

phenol, m-dimethylamino- (m-hydroxy-N, N-dimethylaniline). $(CH_3)_2N$-C_6H_4OH; m.w. 137.09; need. f. lgr.; m.p. 85-7; b.p. 265-8; s.w.; s.al.

phenol, p-(α, α-dimethylpropyl)-. See phenol, p-tert-amyl-.

phenol, 2, 3-dinitro- (1-hydroxy-2, 3-dinitrobenzene). $(NO_2)_2C_6H_3OH$; m.w. 184.05; yel. monocl. need. f.w.; m.p. 144; s.w.; s.al.

phenol, 2, 4-dinitro-. $(NO_2)_2C_6H_3OH$; m.w. 184.05; yel. rhomb. pl. f.w.; m.p. 111.6.

phenol, 2, 6-dinitro-. $(NO_2)_2C_6H_3OH$; m.w. 184.05; pa. yel. rhomb. need. or leaf. f.w.; m.p. 63-4; s.w.; s.al.

phenol, 3, 4-dinitro-. $(NO_2)_2C_6H_3OH$; m.w. 184.05; col. tricl. need. f.w.; m.p. 134; s.al.

phenol, 3, 5-dinitro-. $(NO_2)_2C_6H_3OH$; m.w. 184.05; monocl. leaf. f.dil. HCl; m.p. 123; s.al.

phenol, 2, 4-dinitro-, dimethylthiol-thionocarbonate. See carbamic acid, dimethylthiolthiono-, 2, 4-dinitrophenyl ester.

phenol, ethenylamino-. See benzoxazole, 2-methyl-.

phenol, ethenylaminothio-. See benzothiazole, 2-methyl-.

phenol, m-ethoxy- (resorcinol monoethyl ether). $C_2H_5OC_6H_4OH$; m.w. 138.08; col.-pa. yel. liq.; b.p. 246-7; i.w.; s.al.

phenol, o-ethoxy- (pyrocatechol monoethyl ether; guaethol; catechol monoethyl ether). $C_2H_5OC_6H_4OH$; m.w. 138.08; oily liq.; m.p. 28; b.p. 214-6; s.w.; s.al.

phenol, p-ethoxy- (hydroquinone monoethyl ether). $C_2H_5OC_6H_4OH$; m.w. 138.08; leaf. f.w.; m.p. 66; b.p. 247; s.w.; s.al.

phenol, m-ethyl-. $C_2H_5C_6H_4OH$; m.w. 122.08; liq.; m.p. −4; b.p. 214 ^{752}; s.w.; s.al.

phenol, o-ethyl-. See phlorol.

phenol, p-ethyl-. $C_2H_5C_6H_4OH$; m.w. 122.08; col. need.; m.p. 46; b.p. 219; s.w.; s.al.

phenol, m-ethylamino- (N-ethyl-3-hydroxyaniline). $C_2H_5NHC_6H_4OH$; m.w. 137.09; cr.f.bz.; m.p. 62; b.p. 176 ^{12}; s.w.; s.al.

phenol, o-ethylamino- (N-ethyl-2-hydroxyaniline). $C_2H_5NHC_6H_4OH$; m.w. 137.09; rhomb. pl.; m.p. 107.5; i.w.; s.al.

phenol, p-ethylamino- (N-ethyl-4-hydroxyaniline). $C_2H_5NHC_6H_4OH$; m.w. 137.09; need. f.w.; m.p. 100; s.w.; s.al.

phenol-formaldehyde resins. Resins made by the reaction between phenols and formaldehyde, thermosetting (q.v.)

phenol, p-heptyloxy- (hydroquinone monoheptyl ester). $CH_3(CH_2)_6O$-C_6H_4OH; m.w. 208.16; m.p. 60.

phenol, hexahydro-. See cyclohexanol.

phenol, p-hexyloxy- (hydroquinone monohexyl ether). $CH_3(CH_2)_5OC_6H_4OH$; m.w. 194.14; m.p. 48.

phenolic resin. Resin made by reaction of a phenolic compound, or tar acid, with an aldehyde, more correctly reserved for resins made from pure phenol.

phenol, m-iodo-. IC_6H_4OH; m.w. 219.96; need. f. lgr.; m.p. 40; s.w.; s.al.

phenol, o-iodo-. IC_6H_4OH; m.w. 219.96; need. or pl.; m.p. 43; b.p. 186-7 ^{160}; s.w.; s.al.

phenol, p-iodo-. IC_6H_4OH; m.w. 219.96; col. need. f.w.; m.p. 94; s.w.; s.al.

phenol, p-isoamyl-. $C_5H_{11}C_6H_4OH$; m.w. 164.12; need. f.h.w.; m.p. 93; b.p. 255; s.w.; s.al.

phenol, o-isopropyl- (o-cumenol). $(CH_3)_2CHC_6H_4OH$; m.w. 136.09; col.; m.p. 16; b.p. 204; s.w.; s.al.

phenol, p-isopropyl-. $(CH_3)_2CHC_6H_4$-OH; m.w. 136.09; need.; m.p. 61; b.p. 229.3 ^{750}; s.w.; s.al.

phenol, p, p′, p″-methenyltri-. See leucaurin.

phenol, m-methoxy- (resorcinol monomethyl ether). $CH_3OC_6H_4OH$; m.w. 124.06; liq.; m.p. <-17.5; b.p. 244.3; s.w.; s.al.

phenol, o-methoxy-. See guaiacol.

phenol, p-methoxy- (hydroquinone monomethyl ether). $CH_3OC_6H_4OH$; m.w. 124.06; rhomb. leaf. f.w.; m.p. 53; b.p. 243; s.w.; s.al.

phenol, 2-methoxy-4-methyl-. See creosol.

phenol, methyl-. See cresol.

phenol, o-methylamino-. $CH_3NHC_6H_4$-OH; m.w. 123.08; pl.f.bz.; m.p. 86-7; i.w.; s.al.

phenol, p-methylamino-, sulfate (metol; photol; pictol). $(CH_3NHC_6H_4OH)_2$-H_2SO_4; m.w. 344.23; wh. cr. powd.; m.p. 250-260 d.; s.w.; s.al.; photographic developer.

phenol, p, p′-methylenedi-. See methane, 4, 4′-dihydroxydiphenyl-.

phenol, m-nitro-. $NO_2C_6H_4OH$; m.w. 139.05; col.-yel. monocl. f.et.; m.p. 96; b.p. 194 ^{70}; s.w.; s.al.

phenol, o-nitro-. $NO_2C_6H_4OH$; m.w. 139.05; lt. yel. monocl. need. or pr.; m.p. 45; b.p. 214.5; s.al.

phenol, p-nitro-. $NO_2C_6H_4OH$; m.w. 139.05; col.-ylsh. monocl. pr.; m.p. 114; s.w.; s.al.

phenol, p-nitroso- (quinone monoxime). NOC_6H_4OH, or $HON{:}C_6H_4{:}O$; m.w. 123.05; yel. rhomb. need.; s.w.; s.al.

phenol, p-octyloxy- (hydroquinone, monoöctyl ether). $CH_3(CH_2)_7OC_6H_4$-OH; m.w. 222.17; m.p. 60-1.

phenoloid. The phenolic and xylenolic principle of the "high-boiling acid" obtained from coal tar.

phenol, pentabromo-. C_6Br_5OH; m.w. 488.59; col. monocl. need. f.al.; m.p. 225; i.w.; s.al.

phenol, pentachloro-. Cl_5C_6OH; m.w. 266.29; monocl. pr.; m.p. 191; i.w.; s.al.

phenol, pentamethyl-. $(CH_3)_5C_6OH$; m.w. 164.12; need. f.al.; m.p. 125; b.p. 267; s.al.

phenol, m-phenyl- (m-hydroxybiphenyl). $C_6H_5C_6H_4OH$; m.w. 170.08; need. f. pet. eth, or h.w.; m.p. 78; b.p. >300; s.w.; s.al.

phenol, o-phenyl- (o-hydroxybiphenyl). $C_6H_5C_6H_4OH$; m.w. 170.08; need. f. pet. eth.; m.p. 56; b.p. 275; s.w.; s.al.

phenol, p-phenyl- (p-hydroxybiphenyl). $C_6H_5C_6H_4OH$; m.w. 170.08; col. need. or leaf. f.dil.al.; m.p. 165; b.p. 308; s.w.; s.al.

phenol, phenylazo-. See azobenzene, hydroxy-.

phenolphthalein (2, 2-bis [p-hydroxyphenyl] phthalide). $C_{20}H_{14}O_4$; m.w. 318.11; rhomb. need. f.dil.al.; m.p. 261; s.al.

phenolphthalein, 3′, 3″, 5′, 5″-tetraiodo- (nosophen; iodophen). $C_{20}H_{10}I_4O_4$; m.w. 821.76; cr. or amor. grn. powd.; i.w.; s.al.

Phenolplaste. A synthetic tar-acid resin.

phenol, p-propenyl-. See anol.

phenol, m-propoxy- (resorcinol monopropyl ether). $CH_3CH_2CH_2OC_6H_4$-OH; m.w. 152.09; b.p. 120 ^{5}.

phenol, o-propoxy- (pyrocatechol monopropyl ether). $CH_3CH_2CH_2OC_6H_4$-OH; m.w. 152.09; b.p. 223-6.

phenol, p-propoxy- (hydroquinone monopropyl ether). $CH_3CH_2CH_2OC_6H_4$-OH; m.w. 152.09; m.p. 56-7.

phenol, m-propyl-. $C_3H_7C_6H_4OH$; m.w. 136.09; col. liq.; m.p. 26; b.p. 228; s.w.; s.al.

phenol, o-propyl-. $C_3H_7C_6H_4OH$; m.w. 136.09; liq.; b.p. 220; s.w.; s.al.

phenol, p-propyl-. $C_3H_7C_6H_4OH$; m.w. 136.09; cr.; m.p. 22; b.p. 232.6 ^{760}; s.w.; s.al.

phenols. Hydroxy derivatives of benzene wherein the OH group is attached to a nuclear carbon.

phenol, p-salicylyl-. See benzophenone, 2, 4′-dihydroxy-.

1-phenol-2-sulfonic acid (o-phenolsulfonic acid; aseptol; sozolic acid). $HOC_6H_4SO_3H$; m.w. 174.11; col. liq.; m.p. 50; s.w.; s.al.

1-phenol-4-sulfonic acid (p-phenolsulfonic acid). $HOC_6H_4SO_3H$; m.w. 174.11; deliq. need.; s.w.; s.al.

1-phenol-4-sulfonic acid, 2-amino- (aminophenolsulfonic acid II). HO-$(NH_2)C_6H_3SO_3H$; m.w. 189.12; rhomb.; i.al.

1-phenol-4-sulfonic acid, 2-nitro-. HO-$C_6H_3(NO_2)SO_3H$; m.w. 219.11; need. f.w.; m.p. 141; s.w.; s.al.

phenol, 2, 3, 4, 6-tetranitro-. $(NO_2)_4$-C_6HOH; m.w. 274.05; yel. need. f.chl.; s.w.

phenol, thio- (benzenethiol; phenyl mercaptan). C_6H_5SH; m.w. 110.11; col. liq.; b.p. 169.5; i.w.; s.al.

phenol, 2, 4, 6-triamino-. $(NH_2)_3C_6H_2$-OH; m.w. 139.09; need. unst.; b.p. 257; s.w.; s.al.

phenol, 2, 4, 6-tribromo- (sym-tribromophenol). $Br_3C_6H_2OH$; m.w. 330.77; col. monocl. pr.f.dil. al. or bz.; m.p. 96; s.al.

phenol-2, 4, 6-tricarboxylic acid. See trimesic acid, hydroxy-.

phenol, 2, 3, 5-trichloro-. $Cl_3C_6H_2OH$; m.w. 197.39; lng. col. need. f.al.; m.p. 53-5; b.p. 253; s.w.; s.al.

phenol, 2, 4, 6-trichloro- (sym-trichlorophenol). $Cl_3C_6H_2OH$; m.w. 197.39; rhomb. need.; m.p. 68; b.p. 244.5; s.al.

phenol, 2, 4, 6-triiodo-. $I_3C_6H_2OH$; m.w. 471.78; col. need. f.al.; m.p. 156-8; i.w.

phenol, 2, 4, 5-trimethyl-. See pseudocumenol.

phenol, 2, 4, 6-trimethyl-. See mesitol.

phenol, 2, 3, 6-trinitro- (γ-trinitrophenol). $(NO_2)_3C_6H_2OH$; m.w. 229.05; need.; m.p. 118; s.w.; s.al.

phenol, 2, 4, 5-trinitro- (β-trinitrophenol). $(NO_2)_3C_6H_2OH$; m.w. 229.05; need.; m.p. 96; s.w.; s.al.

phenol, 2, 4, 6-trinitro-. See picric acid.

phenol, m-vinyl- (m-hydroxystyrene). $CH_2{:}CHC_6H_4OH$; m.w. 120.06; oil.; b.p. 114-6 ^{16}.

phenol, o-vinyl- (o-hydroxystyrene). $CH_2{:}CHC_6H_4OH$; m.w. 120.06; need.; m.p. 29; b.p. 108 ^{15}; s.w.; s.al.

phenoplast. General term for phenol-aldehyde resins; synonymous with "phenolics."

phenosuccin. See succinamide, N-p-phenetyl-.

phenothiazine (phenthiazine; thiodiphenylamine). $C_6H_4NHC_6H_2S$; m.w. 199.14; yel. rhomb. leaf. f.al.; m.p. 180; s.al.

Phenox. Phenyl mercury hydroxide used as mold inhibitor.

phenoxide. See phenolate.

phenylacetaldehyde. See α-tolualdehyde.

phenylacetate. See phenol, acetate.

phenylacetic acid. See α-toluic acid.

phenylamine. See aniline.

phenyl bromide. See benzene, bromo-.

phenyl Cellosolve. See Cellosolve, phenyl-.

phenyl chloride. See benzene, chloro-.

phenyl cyanide. See benzonitrile and also corresponding derivatives.

phenyl cyanide, o-amino-. See anthranilonitrile.

phenyl disulfide (phenyldithiobenzene; diphenyl disulfide). $(C_6H_5)_2S_2$; m.w. 218.20; need. f.al.; m.p. 61; i.w.; s.al.

p-phenylene cyanide. See terephthalonitrile.

p-phenylene diacetate. See hydroquinone, diacetate.

m-phenylenediamine (1, 3-benzenediamine; 1, 3-diaminobenzene). C_6H_4-$(NH_2)_2$; m.w. 108.08; col. rhomb. need.; m.p. 62.8; b.p. 287; s.w.; s.al.

o-phenylenediamine (1, 2-benzenediamine; 1, 2-diaminobenzene). C_6H_4-$(NH_2)_2$; m.w. 108.08; brnsh. yel. monocl. cr. or tab. f. chl.; m.p. 102; b.p. 252; s.w.; s.al.

p-phenylenediamine (1, 4-benzenediamine; 1, 4-diaminobenzene). C_6H_4-$(NH_2)_2$; m.w. 108.08; col. monocl. f.w. or et.; m.p. 139.7; b.p. 267; s.w.; s.al.

phenylenediamine, N-acetyl-. See acetanilide, amino-.

m-phenylenediamine, 4-(3-aminophenylazo)- (2, 4, 3′-triaminoazobenzene). $NH_2C_6H_4N_2C_6H_3(NH_2)_2$; m.w. 227.14; or. red. monocl. f.w.; m.p. 143.5; i.w.; s.al.

o-phenylenediamine, N, N′-diacetyl- (1, 4-diacetamidobenzene). $C_6H_4(NA$-$COCH_3)_2$; m.w. 192.11; need. f.w.; m.p. 186; s.w.; s.al.

p-phenylenediamine, N, N-diethyl- (p-amino- N, N-diethylaniline; 1-amino-4-diethylaminobenzene). $(C_2H_5)_2N$-$C_6H_4NH_2$; m.w. 164.14; liq.; b.p. 261-2; s.w.; s.al.

m-phenylenediamine, N, N-dimethyl- (m-amino-N, N-dimethylaniline; 1-amino-3-dimethylaminobenzene). $(CH_3)_2NC_6H_4NH_2$; m.w. 136.11; oil; m.p. <-20; b.p. 268-70; s.w.; s.al.

o-phenylenediamine, N, N-dimethyl- (o-amino-N, N-dimethylaniline; 1-amino-2-dimethylaminobenzene). $(CH_3)_2NC_6H_4NH_2$; m.w. 136.11; col. oil.; b.p. 218 ^{75}; s.w.; s.al.

p-phenylenediamine, N, N-dimethyl- (p-amino-N, N-dimethylaniline; 1-amino-4-diethylaminobenzene). $(CH_3)_2NC_6H_4NH_2$; m.w. 136.11; col. need.; liq.; b.p. 261-2; s.w.; s.al.

m-phenylenediamine, N, N′-di-p-tolyl-. $C_6H_4(NHC_6H_4CH_3)_2$; m.w. 288.17; lng. need. f.al.; m.p. 138.9; i.w.; s.al.

phenylene diamine fluosilicate (m). $C_6H_4(NH_2)_2 \cdot H_2SiF_6$; m.w. 252.16; choc. br. pr.; m.p. 243-4; s. 95% al.

p-phenylene diamine fluosilicate. C_6H_4-$(NH_2)_2 \cdot H_2SiF_6$; m.w. 252.15; pink irreg. pl.; s. 95% al.

o-phenylenediamine, N-phenyl- (o-aminodiphenylamine). $NH_2C_6H_4$-NHC_6H_5; m.w. 184.11; need. f.w.; m.p. 79-80; s.w.

p-phenylenediamine, N-phenyl- (p-aminodiphenylamine). $C_6H_5NHC_6H_4$-NH_2; m.w. 184.11; need. f.al.; m.p. 66-7; b.p. 354 in H_2; s.w.; s.al.

m-phenylenediamine, 4-phenylazo-. See chrysoidine (base).

p-phenylenediamine, N-methyl- (p-methylaminoaniline; p-amino-N-methylaniline). $CH_3NHC_6H_4NH_2$; m.w. 122.09; leaf.; m.p. 35.5 ^{0}; b.p. 259.5; s.w.; s.al.

p-phenylenediamine, N, N, N′, N′-tetramethyl-. $C_6H_4[N(CH_3)_2]_2$; m.w. 164.14; leaf. f.dil. al.; m.p. 51; b.p. 260; s.w.; s.al.

phenylene, diphenyl-. See terphenyl.

m-phenylene dimercaptan. See resorcinol, dithio-.

p-phenylene dimercaptan. See hydroquinone, dithio-.

phenyl ether (phenoxybenzene; diphenyl ether). $(C_6H_5)_2O$; m.w. 170.08; col.

monocl. (rhombic); m.p. 28; b.p. 259; s.w.

phenylethyl alcohol. See phenethyl alcohol.

phenylhydrazine. See hydrazine, phenyl-.

phenyl iodide. See benzene, iodo-.

phenyl isocyanide (phenylcarbylamine). C_6H_5NC; m.w. 103.05; col.-grnsh. liq.

phenyl ketone. See benzophenone.

phenyl mercaptan. See phenol, thio-.

phenyl methyl ketone. See acetophenone.

phenyl methyl pyrazolone. See 5-pyrazolone, 3-methyl- 1 and 3-phenyl-.

phenyl mustard oil. See isothiocyanic acid, phenyl ester.

phenyl α-naphthylamine. See 1-naphthylamine N-phenyl.

phenyl sulfide (diphenyl sulfide; phenylthiobenzene; benzene sulfide). $(C_6H_5)_2S$; m.w. 186.14; col. liq.; m.p. < -40; b.p. 296; i.w.; s.al.

phenyl sulfone (diphenyl sulfone; phenylsulfonylbenzene; benzene sulfone; sulfobenzide). $(C_6H_5)_2SO_2$; m.w. 218.14; monocl. pr.f.bz., pl.f.al., need. f.w.; m.p. 128-9; b.p. 232 [18]; s.w.; s.al.

phenzoline. See quinazoline, 3, 4-dihydro-3-phenyl-.

Philgas. Liquefied natural gas.

phlogopite (magnesium mica). A mineral, $(K,H)_3Mg_3Al(SiO_4)_3\cdot(+Na,-Fe,F)$; monocl., wh.-gray., yelsh. br. to brnsh. red; sp.gr. 2.737-2.869; hardness 2.5-3.0; used as insulator.

phloretic acid (p-hydroxyhydrocinnamic acid; α, β-dihydro-p-coumaric acid). $HOC_6H_4CH_2CH_2COOH$; m.w. 166.08; monocl. f.et.; m.p. 129; s.w.; s.al.

phloretic acid, phloroglucinol monoester. See phloretin.

phloretin (phloroglucinol monophloretate). $C_{15}H_{14}O_5$; m.w. 274.11; sm. leaf.; s.w.; s.al.

phlorizin (phloridzin). $C_{21}H_{24}O_{10}\cdot 2H_2O$; m.w. 472.22; silky need.; m.p. $2H_2O$ 108-9; s.w.; s.al.

phloroglucinol (1, 3, 5-benzenetriol; sym-trihydroxybenzene). $C_6H_3(OH)_3$; m.w. 126.05; rhomb.; m.p. anh. 219; s.al.

phloroglucinolcarboxylic acid. See benzoic acid, 2, 4, 6-trihydroxy-.

phloroglucinol, dimethyl ether. See phenol, 3, 5-dimethoxy-.

phloroglucinol, monomethyl ether. See resorcinol, 5-methoxy-.

phloroglucinol, monophloretate. See phloretin.

phloroglucinol, triethyl ether. See benzene, 1, 3, 5-triethoxy-.

phloroglucinol, trimethyl ether. See benzene, 1, 3, 5-trimethoxy-.

phloroglucinol, trioxime. See 1, 3, 5-cyclohexanetrione, trioxime.

phlorol (o-ethylphenol). $C_2H_5C_6H_4OH$; m.w. 122.08; col. liq.; m.p. < -18; b.p. 207.5; s.w.; s.al.

phlorone (p-xyloquinone; 2, 5-dimethylquinone). $(CH_3)_2C_6H_2O_2$; m.w. 136.06; yel. tricl. f.al.; m.p. 125; s.w.; s.al.

phon. Unit of equivalent loudness.

phonon. A fictitious particle bearing same relation to a sound wave as a photon does to a light wave.

phorone (diisopropylideneacetone; 2, 6-dimethyl-2, 5-heptadien-4-one). $CO[CH:C(CH_3)_2]_2$; m.w. 138.11; yel. cr.; m.p. 28; b.p. 198.5; s.al.

phosgene (carbon oxychloride, chloroformyl chloride, carbonyl chloride). $COCl_2$; m.w. 98.91; col. pois. gas or col. volat. liq.; s.g. 1.392; m.p. −104; b.p. 8.3; s.al.

phosgene, phenylimino-. See aniline, N-(dichloromethylene)-.

phosgene, thio- (thiocarbonyl chloride). $CSCl_2$; m.w. 114.97; red. liq.; b.p. 73.5.

phosgenite (cromfordite). A mineral, $PbCl_2\cdot PbCO_3$; tetr., col., gray or yel.; sp.gr. 6.0-6.305; hardness 2.75-3.0.

Phosilage. A 75% phosphoric acid for ensilaging fodder crops.

phospham. PHN_2; m.w. 60.04; wh. amor.; i.w.

phosphamic acid. $PONH_2\cdot(OH)_2$; m.w 97.06; s.w.

phosphaniline. See phosphine, phenyl-.

phosphate (orthophosphate). A salt of phosphoric acid, e.g., sodium phosphate, Na_3PO_4.

phosphate, normal. See phosphate, tertiary.

phosphate, ortho-. See phosphate.

phosphate, primary. See primary phosphate.

phosphate rock. Natural calcium phosphate rock; used for fertilizer, making phosphoric acid.

phosphate, secondary. Salt of orthophosphoric acid in which two hydrogen atoms are replaced by a metal, e.g. Na_2HPO_4.

phosphate, super-. See superphosphate.

phosphate, tertiary (normal). Salt of orthophosphoric acid in which three hydrogen atoms are replaced by a metal, e.g. Na_3PO_4.

phosphatide (phospholipide). Glyceride containing phosphoric acid and a nitrogenous base, a type of lipin (q.v.).

phosphenyl chloride. See phosphine, dichlorophenyl-.

phosphide. Metallic compound corresponding to phosphine, e.g. Na_3P, sodium phosphide.

phosphine. See hydrogen phosphide.

phosphine, dichlorophenyl- (phosphenyl chloride). $C_6H_5PCl_2$; m.w. 178.97; fum. liq.; b.p. 224.6.

phosphine, diethyl-. $(C_2H_5)_2PH$; m.w. 90.11; col. liq.; b.p. 85; i.w.; s.al.

phosphine, dimethyl-. $(CH_3)_2PH$; m.w. 62.07; col. liq., ign.; b.p. 25; i.w.; s.al.

phosphine, ethyl- (phosphinoethane). $C_2H_5PH_2$; m.w. 62.07; col. liq.; b.p. 25.

phosphine, ethyldiphenyl-. $(C_6H_5)_2PC_2H_5$; m.w. 214.14; liq.; b.p. 293; s.al.

phosphine, methyl-. CH_3PH_2; m.w. 48.06; col. gas; b.p. −14; s.w.; s.al.

phosphine, phenyl- (phosphaniline). $C_6H_5PH_2$; m.w. 110.07; liq.; b.p. 160.

phosphine, triethyl-. $(C_2H_5)_3P$; m.w. 118.14; col. liq.; b.p. 128; i.w.; s.al.

phosphine, triethyl-, oxide. $(C_2H_5)_3PO$; m.w. 134.14; col. deliq. need.; m.p. 52.9; b.p. 242.9; s.w.; s.al.

phosphine, triethyl-, sulfide. $(C_2H_5)_3PS$; m.w. 150.20; hex. pr.; m.p. 94; s.w.; s.al.

phosphine, trimethyl-. $(CH_3)_3P$; m.w. 76.09; col. liq.; b.p. 42; i.w.

phosphine, triphenyl-. $(C_6H_5)_3P$; m.w. 262.14; monocl. pr.f.et.; m.p. 79; b.p. >360; i.w.; s.al.

phosphinic acid, p-benzo-. See benzoic acid, p-phosphono-.

phosphinic acid, dimethyl-. $(CH_3)_2POOH$; m.w. 94.07; cr.; m.w. 76; s.w.; s.al.

phosphinic acid, methyl-. See methane phosphonic acid.

phosphite. A salt of phosphorous acid, e.g. Na_2PO_3, sodium phosphite.

phosphite, hypo-. A salt of hypophosphorous acid, e.g. Na_2PO_2, sodium hypophosphite.

phospholeum. See phosphoric acid, tetra-.

phospholipide. See phosphatide.

phospholipin. See phosphatide.

phosphomolybdic acid. $H_3PO_4\cdot 12MoO_3\cdot 12H_2O$; m.w. 2042.23; monocl. yel.; m.p. $-H_2O$, 104; s.w.

phosphomolybdic acid. $H_3PO_4\cdot 12MoO_3$; m.w. 1826.04; yelsh. cr.; s.w.; s.al.

phosphonic acid, methane. See methane phosphonic acid.

phosphonium bromide. PH_4Br; m.w. 114.97; cub. col.; s.g. g. 2.464 g/l; m.p. 38.8 [734].

phosphonium chloride. PH_4Cl; m.w. 70.51; cub. col.; m.p. 28 [45atm.].

phosphonium iodide. PH_4I; m.w. 161.97; tetr. col.; s.g. 2.86; m.p. subl. 61.8.

phosphonium salt. Salt containing the PH_4^+ group, e.g. PH_4I, phosphonium iodide, analogous to the ammonium compounds.

phosphonium sulfate. $(PH_4)_2SO_4$; m.w. 166.16; cr.

phosphoprotein. Protein rich in phosphorus, e.g. vitellin.

phosphor. Any phosphorescent substance, an inorganic sulfide which exhibits phosphorescence.

phosphor bronze. A special bronze of the following representative compositions: Cu, Sn, P (90, 92, 96; 10, 8, 4; trace, 0.15, 0.2), having a low friction coefficient.

phosphorescence. Re-emission of light, after a time-lag, at a different (longer) wave length than that absorbed.

phosphoric acid paste. A lime-phosphoric acid mixture used in defecation of raw sugar solutions.

phosphoric acid, diamyl ester. See diamyl phosphate.

phosphoric acid, diethyl-. See diethyl-phosphoric acid.

phosphoric acid, hypo-. H_3PO_3; m.w. 81.04; cryst.; m.p. 55; b.p. d. 70; s.w.

phosphoric acid, meta-. HPO_3; m.w. 80.03; vitreous col., deliq.; s.g. 2.2-.5; w. d. to H_3PO_4; s.al.

phosphoric acid, mono-, amyl ester. See amyl phosphate, mono-.

phosphoric acid, ortho-. H_3PO_4; m.w. 98.04; col. liq. or rhomb. cr., deliq.; s.g. 1.834 [15]; m.p. 42.35; b.p. $-\frac{1}{2}H_2O$, 213; s.w.; s.al.

phosphoric acid, ortho-. $(H_3PO_4)_2\cdot H_2O$; m.w. 214.10; hex. pointed pr. col., deliq.; s.w.

phosphoric acid, pyro-. $H_4P_2O_7$; m.w. 178.07; col. need. or liq., hyg.; m.p. 61; s.w.; s.al.

phosphoric acid, tetra- (phospholeum). $H_6P_4O_{13}$; sp.gr. 2.060 at 20° C.; a water-white viscous liquid which reverts to orthophosphoric acid when diluted with water; used for its high P_2O_5 content.

phosphoric acid, thio-. $PS(OH)_3$; m.w. 114.10; s.w.; s.al.

phosphoric anhydride. See phosphorus oxide, pent-.

phosphorite. See phosphate rock.

phosphorobenzene (phosphobenzene). $C_6H_5P:PC_6H_5$; m.w. 216.12; pa. yel. powd.; m.p. 149; i.w.; i.al.

phosphorogen. Substance which induces phosphorescence in another material.

phosphorous acid, hypo-. $H(H_2PO_2)$; m.w. 66.04; col. oily liq. or deliq. cr.; s.g. 1.493 [19]; m.p. 26.5; s.w.; s.al.

phosphorous acid, meta-. HPO_2; m.w. 64.03; feather-like cr.

phosphorous acid, ortho-. H_3PO_3; m.w. 82.04; col.-yel., deliq. cr.; s.g. 1.651 [21.3]; m.p. 73.6; b.p. d. 200; s.w.; s.al.

phosphorous acid, pyro-. $H_4P_2O_5$; m.w. 146.07; need.; m.p. 38; b.p. d. 130.

phosphorus. P; at. wt. 31.02; at. no. 15; m.p. 44.1; b.p. 280; occurs in three allotropic forms, yellow, red and black; an element found only in combination in nature; an essential ingredient of all cell protoplasm, nervous tissue and bones. See phosphorus, black, red, violet and yellow.

phosphorus arsenide. PAs; m.w. 105.95; b.p. subl. d.; i.al.

phosphorus, black. P_4; m.w. 124.08; blk. incombust.; s.g. 2.70; an allotropic form of phosphorus.

phosphorus bromide, penta-. PBr_5; m.w. 430.60; rhomb. yel.; m.p. <100; b.p. 106 d.; s.w. d.

phosphorus bromide, tri-. PBr_3; m.w. 270.77; col. fum. liq.; s.g. 2.852 [15]; m.p. −40; b.p. 172.9; s.w. d.; s.al. d.

phosphorus bromodichloride, hepta-. PBr_7Cl_3; m.w. 661.35; prisms; s.w. d.

phosphorus bromonitride, di-. $PNBr_2$; m.w. 204.86; rhomb.; m.p. 190; b.p. subl. 150 [760]; i.w.

phosphorus bromotetrachloride, mono-. $PBrCl_4$; m.w. 252.76; yel. cr.; s.w.

phosphorus bromotrichloride, d PBr_2Cl_3; m.w. 297.22; or. cr.; m.p. s.w. d.

phosphorus bromotrichloride, oct PBr_6Cl_3; m.w. 776.72; br. nee m.p. 25; s.w. d.

phosphorus bromotrichloride, tetra PBr_4Cl_3; m.w. 457.06; dk. red cr.; s. d.

phosphorus bromotrifluoride, di PBr_2F_3; m.w. 247.85; pa. yel.; m. −20; s.w. d.

phosphorus chloride. P_2Cl_4; m. 203.87; col.; m.p. −28; b.p. 180; s. hydr.

phosphorus chloride, penta-. PC m.w. 208.31; tetr. yelsh., fum.; s. g. 4.65 [200] g/l; m.p. 148 (press); b. subl. 162; s.w. d.

phosphorus chloride, tri-. PCl_3; m. 137.39; col. fum. liq.; s.g. 1.574 m.p. −111.8; b.p. 73.5; s.w. d.

phosphorus chloronitride, di-. P_3N_3Cl m.w. 347.83; rhomb.; s.g. 1.98; m. 114; b.p. 256.5; i.w.; s.al.

phosphorus chloronitride, di-. P_4N_4Cl m.w. 463.77; s.g. 2.18[11]; m.p. 123.

phosphorus chloronitride, di-. $P_5N_5Cl_{10}$ m.w. 579.71; m.p. 41.

phosphorus chloronitride, di-. $P_6N_6Cl_{12}$ m.w. 695.65; m.p. 91.

phosphorus chloronitride, di-. $P_6N_7Cl_3$ m.w. 603.29; m.p. 237.5.

phosphorus chlorotrifluoride, di- PCl_2F_3; m.w. 158.93; m.p. −8; b.p 1412; s.w. d.; s.al. d.

phosphorus fluoride, penta-. PF_5; m.w 126.02; col. gas; s.g. 5.805 g/l; m.p −83; b.p. −75; s.w. d.

phosphorus fluoride, tri-. PF_3; m.w 88.02; col. gas; s.g. 3.907 g/l; m.p −160; b.p. −95; s.w. d.; s.al.

phosphorus imidoamide. $PO(NH)(NH_2)$; m.w. 78.06; amor. wh.; i.w

phosphorus iodide, di-. P_2I_4; m.w 569.72; tricl. orange; m.p. 124.5 s.w. d.

phosphorus iodide, tri-. PI_3; m.w 411.78; hex. red, deliq.; m.p. 61; s.w. d

phosphorus iodochloride. PI_2Cl_3; m.w 391.23; hex. red.; s.w. d.

phosphorus nitride. P_3N_5; m.w. 163.10 amor.; s.g. 2.51 [18]; i.w.; i.al.

phosphorus oxide, pent- (phosphoric anhydride). P_2O_5 (or P_4O_{10}); m.w 142.06; monocl. or wh. powd., v deliq.; s.g. 2.39; m.p. 563; b.p. subl 347; s.w. d. to H_3PO_4.

phosphorus oxide, tetr-. P_2O_4; m.w 126.04; rhomb. col., deliq.; s.g. 2.54 [25] m.p. >100 subl.; b.p. 180; s.w. to H_3PO_3.

phosphorus oxide, tri-. P_4O_6; m.w. 220.08; monocl. col. or wh. powd., deliq.; s.g. 2.135 [21]; m.p. 22.5; b.p. 173; s.w. d. to H_3PO_3.

phosphorus oxybromide. $POBr_3$; m.w. 286.77; col. pl.; s.g. 2.822; m.p. 56; b.p. 193; s.w. d.

phosphorus oxybromodichloride. $POBrCl_2$; m.w. 197.85; tabl. or liq.; s.g. liq. 2.104 [14]; m.p. 13; b.p. 137.6; s.w. d.

phosphorus oxychloride. $POCl_3$; m.w. 153.39; col. fum. liq.; s.g. 1.675; m.p. 1.25; b.p. 107.23.

phosphorus oxychlorodibromide. $POClBr_2$; m.w. 242.31; s.g. lq. 2.45 [25]; m.p. 30.

phosphorus oxyfluoride. PF_3O; m.w. 104.02; col. gas; s.g. 4.69 g/l; m.p. −68; b.p. −40.

phosphorus oxyiodide. $P_2O_3I_6$; m.w. 982.58; red cr.; m.p. 140; s.w.

phosphorus oxynitride. PON; m.w. 61.03; amor. wh.; i.w.

phosphorus oxytetrachloride, tri-. $P_2O_3Cl_4$; m.w. 251.87; s.g. liq. 1.58 [7]; m.p. < -50; b.p. 212.

phosphorus, red. P_4; m.w. 124.08; cub. redsh.-br. or amor. red br. powd.; s.g. 2.20; m.p. 590 [43atm.]; b.p. ign. >200; 280; i.w.; s.al.; on allotropic form of phosphorus.

phosphorus selenide, mono-. PSe; m.w. 141.24; red; i.al.

hosphorus selenide, penta-. P_2Se_5; m.w. 458.04; dk. red-blk. need.

hosphorus selenide, sub-. P_4Se; m.w. 203.28; dk. yel. liq.; m.p. −12; b.p. ign.; i.al.

hosphorus selenide, tri-. P_2Se_3; m.w. 299.64; dk. red.

hosphorus sulfide. P_4S_{10}; m.w. 444.68; lt. yel. cr.; s.g. 2.09; m.p. 290; b.p. 515.

hosphorus sulfide, di-. P_2S_6 (or PS_2); m.w. 285.42; yel. need.; m.p. 298; b.p. 337 $^{10.5}$.

hosphorus sulfide, hepta-. P_4S_7; m.w. 348.50; lt. yel. cr.; s.g. 2.19 ^{17}; m.p. 310; b.p. 523.

hosphorus sulfide, penta-. P_2S_5; m.w. 222.34; gray-yel. cr., deliq.; s.g. 2.03; m.p. 276; b.p. 514.

hosphorus sulfide, sesqui-. See phosphorus sulfide, tri-.

hosphorus sulfide, tri-. P_4S_6 (or P_2S_3); m.w. 316.44; gray-yel. cr.; m.p. 290; b.p. 490; s.al.

hosphorus sulfide, tri- (sesquisulfide). P_4S_3; m.w. 220.26; rhomb. yel.; s.g. 2.03; m.p. 172.5; b.p. 407.5; i.w.

hosphorus sulfoxide. $P_4S_4O_6$; m.w. 348.32; tetr., deliq.; m.p. 102; b.p. 295.

hosphorus thioamide. $PS(NH_2)_3$; m.w. 111.15; amor. yel.-wh.; s.g. 1.7 ^{13}; m.p. d. 200; s.w.

hosphorus thiobromide. $P_2S_2Br_4$; m.w. 477.88; yel. oil; s.g. liq. 2.262 ^{17}.

hosphorus thiobromide. $PSBr_3$; m.w. 302.83; cub. yel.; s.g. 2.85 ^{17}; m.p. 38; b.p. d. 175.

phosphorus thiobromide. $PSBr_3 \cdot H_2O$; m.w. 320.84; s.g. 2.794 ^{18}; m.p. 35.

phosphorus thiobromochloride. $PSBrCl_2$; m.w. 213.91; yel. liq.; s.g. lq. 2.12°; m.p. −30; b.p. 150 d.

phosphorus thiochloride. $PSCl_3$; m.w. 169.45; col. liq.; s.g. lq. 1.635; m.p. −35; b.p. 125.

phosphorus thiochlorobromide. $PSClBr_2$; m.w. 258.37; s.g. liq. 2.48°; m.p. −60.

phosphorus thiocyanate. $P(CNS)_3$; m.w. 205.22; liq.; s.g. 1.625 ^{18}; m.p. < −20; b.p. 265; s.al.

phosphorus thiofluoride. PSF_3; m.w. 120.08; gas; m.p. 3.8 $^{7.6\ atm.}$.

phosphorus thioiodide. P_2SI_2; m.w. 347.94; m.p. 75.

phosphorus triamide. $PO(NH_2)_3$; m.w. 95.09; amor. wh.; i.w.; s.al.

phosphorus, violet. P_4; m.w. 124.08; monocl. vlt.; s.g. 2.36; m.p. 593; i.w.; an allotropic form of phosphorus.

phosphorus, yellow. P_4; m.w. 124.08; cub. yelsh. wax-like solid; s.g. 1.82; m.p. 44.1; ign. 34; b.p. 280; s.w.; s.al.; an allotropic form of phosphorus.

phosphoryl. The trivalent radical, ≡PO.

Phosphosol. Tetrapotassium pyrophosphate.

Phosphotex. Tetrasodium pyrophosphate.

phosphotungstic acid. $P_2O_5 \cdot 12WO_3 \cdot 42H_2O$; m.w. 3682.70; yel.-grn. cr.; s.w.; s.al.

phot. A measure of surface illumination; one lumen per square centimeter; 1.000×10^4 lumens per sq. meter; 1×10^4 lux.

photoechy (Colson-Russell effect). Dark markings on developed film often carrying pattern from backing paper.

photo-e.m.f. cell (photocell). Cell that directly converts radiant into electrical energy.

photoactivation. See photocatalysis.

photoanisotropy. Variation of optical constants, in different directions, under certain anisotropic conditions.

photocatalysis. Increase in the speed of, or the facilitation of a reaction by exposure to light or light waves of a definite frequency.

photocell. See photo-e.m.f. cell.

photochemical equivalent law. Each molecule entering into reaction has to be excited by the absorption of one quantum of radiation.

photochemical yield. See quantum efficiency.

photochemistry. The study of chemical changes involving absorption or emission of light.

photocurrent coefficient. Change in generated photocurrent per unit change in radiant flux generating it.

photoconductive effect. Change in ohmic resistance of a substance caused by incident light, as, for example, in a selenium cell.

photodisintegration. Atomic nucleus disintegration caused by radiant energy.

photoelectric constant. Constant whose product with the frequency of a radiation inducing photoemission equals potential difference (in c.g.s. units) of the quantum energy taken up by the emitted photoelectron.

photoelectric effect. Emission of electrons from a surface due to light falling upon it, occurring when the atom absorbs energy not only sufficient to raise an electron to higher energy levels, but sufficient to eject the electron from the atom.

photoelectric threshold. Quantum energy necessary to release photoelectrons from a surface.

photoelectric yield (spectral sensitivity). Rate of photoelectric emission from a metal per unit radiant flux of any frequency.

photoemissive effect. The liberation of electrons brought about by exposure to light, as, for example, when sodium is illuminated.

photogen. Luminescent substance.

photogenic. Term applied to class of bacteria that produce phosphorescence.

photoglow tube. A phototube filled with gas under high pressure. Sufficient voltage is used between the electrodes so that the electron flow due to the photoelectric effect will ionize the gas and initiate a glow discharge.

photographic sensitizer. Deeply colored dyestuff which increases sensitivity of films toward red rays, e.g. cyanines.

photoionization. Ionization of a gas caused by light.

photoluminescence. Luminescence caused by exposure to light.

photomagnetic effect. Effect of light on magnetic susceptibility.

photol. See phenol, p-methylamino-, sulfate.

photometer. Instrument for measuring light intensity.

photometric constant. Ratio of developed silver per sq. dm. to the photographic density.

photon. A unit package of radiant energy as conceived by the Planck quantum theory. It is the energy emitted when an electron jumps from one orbit to the next inner orbit of an atom.

photoneutron. Neutron released during photodisintegration.

photophone. Instrument for transmission of sound by means of a light beam.

photophoresis. Attraction or repulsion of minute particles in air produced by an intense beam of light.

photosensitation. The activation toward light by a substance which does not undergo a change but absorbs light and passes it on to substances that react.

photosynthesis. The manufacture of starch in a plant, thru the action of light and in the presence of chlorophyll, from carbon dioxide and water. See photocatalysis.

phototelometer. Instrument using a barrier-layer cell for reading light intensity directly.

photosynthetic number. Measure of ratio of chlorophyll content to rate of photosynthesis.

photronic cell. Photovoltaic cell employing cuprous oxide.

phototube. A light sensitive device which, if connected to a circuit of the proper voltage, will permit a current to flow only when it is illuminated.

photovoltaic cell. Cell which generates voltage when illuminated.

photovoltaic effect. Production of an e.m.f. by a chemical or physical reaction caused by light, e.g. in a copper oxide cell.

phthalaldehyde (1, 2-benzenedicarbonal; o-phthalic aldehyde). $C_6H_4(CHO)_2$; m.w. 134.05; yel. need.; m.p. 56; s.al.

phthalaldehydic acid (o-formylbenzoic acid). $CHOC_6H_4COOH$; m.w. 150.05; monocl. f.w.; m.p. 97; s.al.

phthalaldehydic acid, 5, 6-dimethoxy-. See opianic acid.

phthalamide (phthalic diamide). $C_6H_4(CONH_2)_2$; m.w. 164.08; col. rhbdr.; m.p. 220; i.w.; i.al.

phthalandione. See phthalic anhydride.

phthalanil (n-phenylphthalimide). $C_6H_4(CO)_2NC_6H_5$; m.w. 223.08; col. need. f.al.; m.p. 207; i.w.; i.al.

1, 4-phthalazinedione, 5-amino-2, 3-dihydro-. See luminol.

phthalein. Hydroxyxanthene derivative used as an acid dye, e.g. fluorescein.

phthalhydrazide, 3-amino-. See luminol.

phthalic acid (1, 2-benzenedicarboxylic acid; o-phthalic acid). $C_6H_4(COOH)_2$; m.w. 166.05; col. rhomb. or monocl. f.w.; s.w.; s.al.

m-phthalic acid. See isophthalic acid.

p-phthalic acid. See terephthalic acid.

phthalic acid, 3-benzoyl- (2, 3-benzophenonedicarboxylic acid). $C_6H_5CO-C_6H_3(COOH)_2$; m.w. 270.08; pl. or need. $(+1H_2O)$ f.w.; m.p. $-H_2O$ 100; s.w.; s.al.

phthalic acid, 4-benzoyl- (3, 4-benzophenonedicarboxylic acid). $C_6H_5CO-C_6H_3(COOH)_2$; m.w. 270.08; cr.; m.p. 189; s.w.; s.al.

phthalic acid, 3-bromo- (3-bromo-1, 2 benzenedicarboxylic acid). $BrC_6H_3(COOH)_2$; m.w. 244.96; need. f.w.; m.p. 150; b.p. $-H_2O$, anh. 188; s.w.; s.al.

phthalic acid, 4-chloro- (4-chloro-1, 2-benzenedicarboxylic acid). $ClC_6H_3(COOH)_2$; m.w. 200.50; need. f.al.; m.p. 150; b.p. $-H_2O$, >150; s.w.; s.al.

phthalic acid, diamyl ester. $C_6H_4(CO_2 \cdot C_5H_{11})_2$; m.w. 286.2; white to light-straw-colored liq.; sp.gr. 1.022-1.026; b.p. 247-255 at 50 mm.; i.w.; plasticizer and solvent for nitrocellulose; foam prevention medium in glue manufacture.

phthalic acid, dibenzyl ester. $C_6H_4(COOCH_2C_6H_5)_2$; m.w. 346.14; m.p. 42-4; b.p. 277 ^{15}; i.w.; s.al.

phthalic acid, dibutoxy ethyl-. See phthalic acid, ethyl dibutoxy-.

phthalic acid, dibutyl ester (dibutyl 1, 2-benzenedicarboxylate; butyl phthalate). $C_6H_4(COOC_4H_9)_2$; m.w. 278.17; col. oily liq.; b.p. 340; s.al.

phthalic acid, diethyl ester. $C_6H_4(COOC_2H_5)_2$; m.w. 222.11; col. liq.; b.p. 296.1; i.w.; s.al.

phthalic acid, 1, 6-dihydro- (2, 4-cyclohexadiene-1, 2-dicarboxylic acid). $C_6H_6(COOH)_2$; m.w. 168.06; monocl. pr.f.w. or al.; m.p. 179-80; s.al.

phthalic acid, 3, 6-dihydro- (1, 4-cyclohexadiene-1, 2-dicarboxylic acid). $C_6H_6(COOH)_2$; m.w. 168.06; monocl. pr.f.w.; m.p. 153.

phthalic acid, 4, 5-dihydro, 4, 5-dihydro- (2, 6-cyclohexadiene-1, 2-dicarboxylic acid). $C_6H_6(COOH)_2$; m.w. 168.06; tricl.; m.p. 215; s.al.

phthalic acid, 3, 4-dimethoxy-. See hemipic acid.

phthalic acid, dimethyl ester. $C_6H_4(CO_2CH_3)_2$; m.w. 194.08; col. liq.; sp.gr. 1.1940; b.p. 282.0; s.w.; a solvent for resin; plasticizer for cellulose acetate and nitrocellulose lacquers.

phthalic acid, diphenyl ester (phenyl phthalate). $C_6H_4(COOC_6H_5)_2$; m.w. 318.11; col. rhomb.; m.p. 69-70; i.w.; s.al.

phthalic acid, ethyl dibutoxy-. $C_6H_4(COOC_2H_4OC_4H_9)_2$; m.w. 366.24; pale col. liq.; sp.gr. 1.06; b.p. 233 at 5 mm.; used as a plasticizer for nitrocellulose, vinyl chloride and other resins.

phthalic acid, hexahydro-. See 1, 2-cyclohexanedicarboxylic acid.

phthalic acid, 3-hydroxy-. $HOC_6H_3(COOH)_2$; m.w. 182.05; pr.f.w.; m.p. 244; s.al.

phthalic acid, 4-hydroxy-. $HOC_6H_3(COOH)_2$; m.w. 182.05; col. rosettes f.w.; s.al.

phthalic acid, monoethyl ester (ethyl hydrogen 1, 2-benzenedicarboxylate). $C_6H_4(COOC_2H_5)COOH$; m.w. 194.08; liq.; m.p. 2; s.w.; s.al.

phthalic acid, 3-nitro-. $NO_2C_6H_3(COOH)_2$; m.w. 211.05; yel. monocl. f.et.; m.p. 220; s.al.

phthalic acid, 4-nitro-. $NO_2C_6H_3(COOH)_2$; m.w. 211.05; lt. yel. need.; m.p. 164; s.w.; s.al.

phthalic acid, tetrachloro-. $C_6Cl_4(COOH)_2$; m.w. 303.84; leaf. or need. f.w.; m.p. 250; s.al.

phthalic acid, Δ^2-tetrahydro-. See 1-cyclohexene-1, 2-dicarboxylic acid.

phthalic aldehyde. See phthalaldehyde.

m-phthalic aldehyde. See isophthalaldehyde.

p-phthalic aldehyde. See terephthalaldehyde.

phthalic anhydride (phthalandione). $C_6H_4(CO)_2O$; m.w. 148.03; col. rhomb. need.; m.p. 130.8; s.w.; s.al.

phthalic diamide. See phthalamide.

phthalic imide. See phthalimide.

phthalide. (1 [3]-isobenzofuranone; a-hydroxy-o-toluic acid lactone). $C_6H_4COOCH_2$; m.w. 134.05; need. f.w.; m.p. 73; b.p. 290; s.w.; s.al.

phthalide, benzal- (benzylidenephthalide). $C_6H_4COOC:CHC_6H_5$; m.w. 222.08; col. monocl. pr.f.al.; m.p. 108; i.w.; s.al.

phthalide, benzylidene-. See phthalide, benzal-.

phthalide, 2, 2-bis (p-hydroxyphenyl)-. See phenolphthalein.

phthalide, 5, 6-dimethoxy-. See meconin.

phthalide, 3, 3-diphenyl- (triphenylcarbinol o-carboxylic anhydride; "phthalophenone"). $C_6H_4COOC(C_6H_5)_2$; m.w. 286.11; leaf f.al.; m.p. 115; s.al.

phthalide, 6-nitro-. $NO_2C_6H_3COOCH_2$, m.w. 179.05; need. f.al.; m.p. 141; i.w.; s.al.

phthalimide (1, 3-isoindoledione; o-phthalic imide). $C_6H_4(CO)_2NH$; m.w. 147.05; hex. pr. f.et.; m.p. 238; s.al.

phthalimide, N-isobutyl- (2-isobutyl-1, 3-isoindoledione). $C_6H_4CON(C_4H_9)CO$; m.w. 203.11; m.p. 93; b.p. 293-5.

phthalimide, N-phenyl-. See phthalanil.

phthalimidine (1-isoindolinone). $C_6H_4CONHCH_2$; m.w. 133.06; need.; m.p. 150; b.p. 337 ^{720}; s.w.; s.al.

phthalonic acid (o-carboxyphenylglyoxylic acid). $C_6H_4(COCOOH)COOH$; m.w. 194.05; pr.f.bs. or al.; m.p. 138-40; s.w.; s.al.

phthalophenone. See phthalide, 3, 3-diphenyl-.

phthalyl alcohol. See o-xylylene glycol.

phthalyl chloride (1, 2-benzenedicarbonyl chloride; o-phthalyl dichloride). $C_6H_4(COCl)_2$; m.w. 202.95; col. oily liq.; m.p. sym. 16, uns. 89; b.p. sym. 281, uns. 275.

m-phthalyl dichloride. See isophthalyl chloride.

p-phthalyl dichloride. See terephthalyl chloride.

phycitol. See i-erythritol.

phycoerythrin. Red pigment occurring in red sea-weeds.

phycomycetes. Group of algae-like fungi including many common molds.

phyllochlorin. Chlorophyll-protein compound.

physical change. Alteration of physical properties, no change occurring in the chemical identity of a substance. Compare with chemical change.

physical chemistry. The study that deals with the interrelations of chemical and energy changes.

physical constants. Determined values characteristic of chemical substances, such as atomic weight, vapor density, etc.

physics. The science concerned with matter and energy and their interrelations.

physiological chemistry. See biochemistry.

physostigmine (eserine). $C_{15}H_{21}N_3O_2$; m.w. 275.19; col. hyg. trim. f.bz.; m.p. unst. 86-7; stab. 105-6; s.w.; s.al.

physostigmine, hydrochloride. $C_{15}H_{21}N_3O_2 \cdot HCl$; m.w. 311.65; wh. cr.; s.w.

physostygmine, salicylate. $C_{15}H_{21}N_3O_2 \cdot C_7H_6O_3$; m.w. 413.23; col.-yel. acicular cr.; m.p. 178.9.

physostygmine, sulfate. $(C_{15}H_{21}N_3O_2)_2 \cdot H_2SO_4$; m.w. 648.45; micro-cr. powd.; m.p. 140; s.w.; s.al.

physical properties. Those properties perceptible to the senses, as color, taste, solubility, density, state, boiling and freezing points; properties other than those involving chemical changes.

phytamin (auxin; plant-hormone). Generic term for accessory food factors of plants, e.g. phenyl propionic acid.

-phytes. Suffix denoting ecological class of plants.

phytol (3, 7, 11, 15-tetramethyl-2-hexadecen-1-ol). $C_{20}H_{39}OH$; m.w. 296.31; col. oil; b.p. 145 $^{.02-.04}$; i.w.; s.al.

phytosterol. Sterol of vegetable origin.

pi-planes. Atomic planes forming the boundary around crevices in the mosaic structure of a crystal.

piazine. See pyrazine.

picene (dibenzo[ai] phenanthrene). $C_{22}H_{14}$; m.w. 278.11; col. leaf.; m.p. 364; b.p. 520; i.w.; s.al.

pick. An individual filling yarn. See also filling thread.

pickling. Treating de-limed, bated or drenched hides with salt and sulfuric acid. See also pickling metals.

pickling acid. See sulfuric acid.

pickling metals. Cleaning of metal, prior to plating, by treatment with acid.

picoline. $C_5H_4N(CH_3)$; m.w. 93.06; any one of three isomers obtained from bone oil; col. liq.; sp.gr. 0.952; used in medicine.

2-picoline (2-methylpyridine; α-picoline). $CH_3C_5H_4N$; m.w. 93.06; col. liq.; m.p. −69.9; b.p. 128; s.w.; s.al.

3-picoline (3-methylpyridine; β-picoline). $CH_3C_5H_4N$; m.w. 93.06; col. liq.; b.p. 143.5; s.w.; s.al.

4-picoline (4-methylpyridine; γ-picoline). $CH_3C_5H_4N$; m.w. 93.06; col. liq.; b.p. 143.1; s.w.; s.al.

2-picoline-4, 6-dicarboxylic acid. See uvitonic acid.

picolinic acid (2-pyridinecarboxylic acid). C_5H_4NCOOH; m.w. 123.05; need. f.w.; m.p. 137; s.w.

picotite (chrome-spinel). A mineral, $(Mg,Fe)O \cdot (Al,Cr)_2O_3$; yelsh. br., grnsh. br. to blk.; sp.gr. 4.08.

picraconitine. See benzaconine.

picramic acid (2-amino-4, 6-dinitrophenol). $NH_2(NO_2)_2C_6H_2OH$; m.w. 199.06; red monocl. f.chl.; m.p. 168-9; s.al.

picramide. See aniline, 2, 4, 6-trinitro-.

picric acid (2, 4, 6-trinitrophenol). $(NO_2)_3C_6H_2OH$; m.w. 229.05; yel. rhomb. leaf. f.w.; m.p. 121.8.

picric acid, methyl ester. See anisole, 2, 4, 6-trinitro-.

picromerite. See magnesium potassium sulfate.

picryl chloride (2-chloro-1, 3, 5-trinitrobenzene). $(NO_2)_3C_6H_2Cl$; m.w. 247.50; yel. monocl. pr. f. et.; m.p. 83.

Pictet's liquid. A freezing mixture; liquid carbon dioxide and sulfur dioxide.

pictol. See phenol, p-methylamino-, sulfate.

piedmontite. $Ca_2(AlOH)(AlMn)_2(SiO_4)_3$; variety of epidote; sp.gr. 3.404; red-br. or blk.

piezoelectricity. Phenomenon exhibited by certain asymmetrical crystals of forming electrical charges on their surfaces when mechanically stressed; conversely these surfaces exhibit mechanical strains where electrically charged.

piezometer. Instrument for determining compressibility of a substance.

pig iron. See cast iron.

pig lead. Crude lead cast in open molds into blocks or rough bars.

pigment. A finely divided, insoluble material that imparts a color to the substance to which it is added, or makes it black, white or gray.

pilchard oil. See oil, herring.

pile. The raised loops or tufts (cut loops) that form all part of the surface of a pile fabric.

pile yarn. See yarn, pile.

pilocarpidine(d). $C_{10}H_{14}N_2O_2$; m.w. 194.13; viscid. oil; s.w.; s.al.

pilocarpidine, chloroplatinate. $(C_{10}H_{14}N_2O_2 \cdot HCl)_2PtCl_4 \cdot 4H_2O$; m.w. 870.30; or. yel. leaf. or dk. red. pyr.; m.p. 88-9, anh.; i.al.

pilocarpidine, nitrate. $C_{10}H_{14}N_2O_2 \cdot HNO_3$; m.w. 257.14; wh. cr.; s.w.; s.al.

pilocarpine. $C_{11}H_{16}N_2O_2$; m.w. 208.14; col. oil or need.; m.p. 34; s.w.; s.al.

pilocarpine, hydrochloride. $C_{11}H_{16}N_2O_2 \cdot HCl$; m.w. 244.61; deliq. pr. or need.; m.p. anh. 196.7; s.w.; s.al.

pilocarpine, nitrate. $C_{11}H_{16}N_2O_2 \cdot HNO_3$; m.w. 271.16; pr. f. al. or w.; m.p. 176-8; s.w.

pilocarpine, salicylate. $C_{11}H_{16}N_2O_2 \cdot C_7H_6O_3$; m.w. 346.19; wh. cr.; m.p. 120; s.w.; s.al.

pilocarpine, sulfate. $(C_{11}H_{16}N_2O_2)_2 \cdot H_2SO_4$; m.w. 514.36; wh. cr. f.al. +et.; m.p. 132; s.w.; s.al.

pilocarpus. See jaborandi.

d-pimaric acid. $C_{20}H_{30}O_2$; m.w. 302.23; cr.; m.p. 212; b.p. 282 ^{20}; i.w.; s.al.

pimelic acid (heptanedioic acid). $COOH(CH_2)_5COOH$; m.w. 160.09; monocl. pr. f.w.; m.p. 103; s.al.

pimelic acid, diethyl ester (ethyl pimelate). $CH_2(CH_2CH_2COOC_2H_5)_2$; m.w. 216.16; col. liq.; b.p. 252-57 ^{48}; i.w.; s.al.

pimelic acid, γ-keto-. See acetodiacetic acid.

pimelic ketone. See cyclohexanone.

pimelite. Natural green nickeliferous silicates.

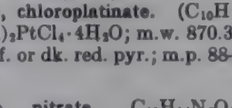
pimenta oil. See oil, allspice.

pimento oil. See oil, allspice.

pinacol (2, 3-dimethyl-2, 3-butanediol; tetramethylethylene glycol; pinacone). $(CH_3)_2C(OH)COH(CH_3)_2$; m.w. 118.11; col. need.; m.p. 38; b.p. 172.8; s.w.; s.al.

pinacol rearrangement. Process of reducing ketones to ditertiary alcohols (pinacols).

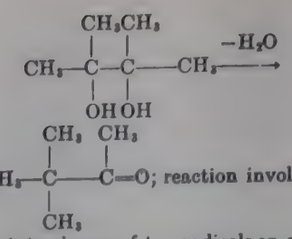
pinacolins. Compounds formed from pinacols wherein a molecule of water is lost and a hydrocarbon radical migrates from one tertiary carbon to the other, e.g.



pinacolin (3, 3-dimethyl-2-butanone; tert-butyl methyl ketone). $CH_3CO-C(CH_3)_3$; m.w. 100.09; col. liq.; m.p. −52.5; b.p. 106.2; s.al.

pinacolyl alcohol (3, 3-dimethyl-2-butanol; methyl-tert-butylcarbinol). $(CH_3)_3CCHOHCH_3$; m.w. 102.11; liq. or silky need.; m.p. 5.5; b.p. 121-3; s.w.; s.al.

pinacone-pinacoline transformation. Reaction in which an alkyl radical migrates during a process of dehydration, e.g.



an interchange of two radicals on adjacent carbon atoms, namely CH_3 and OH, followed by elimination of a molecule of water.

pinacone. See pinacol.

pine creosote. Oily distillate obtained from pine tree wood; used in disinfectants and in medicine.

pine oil. See oil, pine and oil, pine needle.

pine-needle oil. See oil, pine-needle.

pine pitch. See pitch, pine.

pine pitch (pine tar pitch; pitch prime). Black amorphous solid; sp.gr. 1.105; m.p. 82; sol. org. solvents; used in preserving timber and in shoemaker's wax.

pine resin. See gum rosin.

pine tar. Black semi-solid obtained in destructive distillation of pine; sp.gr. 1.03-1.07; b.p. 240-400; s.al.; used in roofing, compositions, tar soaps, road paving; as general preservative.

pine-tar oil. See oil, tar.

dl-pinene (dl-2, 6, 6-trimethyl bicyclo-[3, 1, 1]-hept-2-ene; dl-α-pinene). $C_{10}H_{16}$; m.w. 136.12; col. liq.; m.p. −55; b.p. 154; s.w.; s.al.

pinene, hydrochloride. See bornyl chloride.

pinole (dl) (6, 8-epoxy-1-p-menthene; 4, 7, 7-trimethyl-6-oxabicyclo [3, 2, 1]-oct-3-ene; dl-sobrerone). $C_{10}H_{16}O$; m.w. 152.12; b.p. 184; s.al.

pinol, hydrate (i-1-p-menthene-6, 8-diol). $C_{10}H_{18}(OH)_2$; m.w. 170.14; col.; m.p. 150; b.p. 270-1; s.al.

pinoline. See rosin spirit.

pintsch gas. See oil gas.

Pip-Pip. Piperidine-pentamethylene dithiocarbamate powder; a rubber accelerator.

pipeclay. Kaolin or china clay used in ceramics, making certain types of molds, and in cleaning certain white leathers.

2-pipecoline (2-methylpiperidine; α-pipecoline). $CH_3C_5H_9NH$; m.w. 99.11; liq.; m.p. 9; b.p. 119; s.w.

3-pipecoline (3-methylpiperidine; β-pipecoline). $CH_3C_5H_9NH$; m.w. 99.11; liq.; b.p. 126; s.w.

4-pipecoline (4-methylpiperidine; γ-pipecoline). $CH_3C_5H_9NH$; m.w. 99.11; liq.; b.p. 129; s.w.

piperazines. Hexahydrogen addition products of 1, 4-diazine and its homologues.

piperazine (hexahydropyrazine; diethylenediamine). $NHCH_2CH_2NHCH_2-CH_2$; m.w. 86.09; col. rhomb. f.al.; m.p. 105.6; b.p. 146; s.w.; s.al.

piperazine, hexahydrate. $C_4H_{10}N_2 \cdot 6H_2O$; m.w. 194.19; wh. cr.; m.p. 44; s.w.; s.al.

piperazine, 1, 4-bis (hydrocinnamyl)-. $(C_6H_5CH_2CH_2CO)_2C_4H_8N_2$; m.w. 350.22; wh. cr.; m.p. 122.5-3.0; i.w.; s.al.

piperazine, α, γ-diaci-. See glycine anhydride.

piperazine, 1, 4-dianisoyl-. $(CH_3OC_6H_4CO)_2C_4H_8N_2$; m.w. 354.19; wh. cr.; m.p. 192.5-3.5; i.w.; s.al.

piperazine, dihydrobromide. $C_4H_{10}N_2 \cdot 2HBr$; m.w. 247.94; wh. need.; s.w.; i.al.

piperazine, dihydrochloride. $C_4H_{10}N_2 \cdot 2HCl$; m.w. 159.02; wh. need.; s.w.; i.al.

piperazine, 2, 5-dimethyl-(trans). $(CH_3)_2C_4H_8N_2$; m.w. 114.13; monocl. pr.; m.p. cis: 114, trans: 118; b.p. 162; s.w.; s.al.

piperazine, 1, 4-dinitroso-. $C_4H_8N_2(NO)_2$; m.w. 144.09; wh. pl.; m. 157-8; s.w.; i.al.

2, 5-piperazinedione. See glycine anhydride.

piperazine, 1, 4-di-α-toluyl-. $(C_6H_5CHCO)_2C_4H_8N_2$; m.w. 322.19; wh. cr. m.p. 150-1; s.w.; s.al.

piperazine, 1-phenyl-. $C_4H_9N_2C_6H_5$; m.w. 162.13; pa. yel. oil; b.p. 156-7 i.w.; s.al.

piperazine, tetraphenyl-. See amaro

piperethylalkine. See piperidineethanol

piperic acid (5-[3, 4-methylenedioxyphenyl]-2, 4-pentadienoic acid; [3, 4-methylenedioxystyryl] acrylic acid). $(CH_2O_2)C_6H_3CH:CHCH:CHCOOH$; m.w. 218.08; yel. need. f.al. m.p. 217; s.w.

piperidic acid. See butyric acid, amino-.

piperidine (hexahydropyridine; pentamethyleneimine). $(CH_2)_5NH$; m.w. 85.09; col. liq.; m.p. −9; b.p. 105.8 s.w.; s.al.

piperidine, 1-acetal- (acetic acid piperidide; n-acetylpiperidine). $CH_3CON(CH_2)_5$; m.w. 127.11; lt. liq. m.p. 107-9; b.p. 227-8; s.w.; s.al.

piperidine, 2-allyl-. See β-conicein

piperidine, 4-benzoxy-2, 2, 6-trimethyl-lactate. See β-eucaine, lactate.

piperidine, 1-benzoyl-. $C_5H_{10}NCOC_6H_5$; m.w. 189.13; col. need.; m.p. 48; b.p. 184 ^{17}; i.w.; s.al.

1-piperidinecarbodithioic acid, piperidinium salt (piperidinium cyclopentamethylenedithiocarbamate). $C_5H_{10}NCSSNH_2C_5H_{10}$; m.w. 246.31; pa. yel. pl.; m.p. 171-2; s.w.; s.al.

1-piperidinecarbodithioic acid, zinc salt $(C_5H_{10}NCSS)_2Zn$; m.w. 385.79; wh. powd.; m.p. 223-5; i.w.; i.al.

piperidine, 1, 2-dimethyl- (n, α-dimethylpiperidine). $C_5H_9N(CH_3)_2$; m.w. 113.13; liq.; b.p. 127.9.

piperidineëthanol (β-hydroxyethylpiperidine; ethoxylpiperidine; piperethylalkine). $C_5H_{10}NCH_2CH_2OH$; m.w. 129.13; liq.; b.p. 199; s.w.; s.al.

piperidine, ethoxyl-. See piperidineethanol.

piperidine, 1-ethyl- (N-ethylpiperidine). $C_2H_5NC_5H_{10}$; m.w. 113.13; liq.; b.p. 128.

piperidine, 2-ethyl-(dl) (dl-α-ethylpiperidine). $NHCH(C_2H_5)(CH_2)_4$; m.w. 113.13; b.p. 143.

piperidine, 3-ethyl-(dl) (dl-β-ethylpiperidine). $NHCH_2CH(C_2H_5)(CH_2)_3$; m.w. 113.13; liq.; b.p. 152.6; s.w.

piperidine, 1-formyl- (N-formylpiperidine). $HCONC_5H_{10}$; m.w. 113.09 wh.-yel. liq.; b.p. 218-22; s.w.; s.al.

piperidine, β-hydroxyethyl-. See piperidineethanol.

piperidine, 1-methyl-. $C_5H_{10}NCH_3$; m.w. 99.11; liq.; b.p. 107; s.w.; s.al.

piperidine, 2-methyl-. See 2-pipecoline.

piperidine, 3-methyl-. See 3-pipecoline.

piperidine, 4-methyl-. See 4-pipecoline.

piperidine, 1-piperyl-. See piperine.

piperidine, 1-propyl- (n-n-propylpiperidine). $CH_3CH_2CH_2NC_5H_{10}$; m.w. 127.14; col. liq.; b.p. 149-50; s.al.

piperidine, 2-propyl-. See coniine.

piperidine, 2-3 (-pyridyl)-. See anabasine.

4-piperidone, 2, 2, 6, 6-tetramethyl-. See triacetonamine.

piperine (1-piperylpiperidine). $C_{17}H_{19}NO_3$; m.w. 285.16; col. monocl. need. f.al.; m.p. 128-9.5; s.w.; s.al.

piperine, hydroiodide diiodide. $(C_{17}H_{19}NO_3)_2 \cdot HI \cdot I_2$; m.w. 952.08; steel bl. need.; m.p. 145; s.w.

piperitone. $C_{10}H_{16}O$; m.w. 152.12; ketone obtained from eucalyptus oils.

piperolidine (octahydropyrrocoline; δ-coniceine). $C_8H_{15}N$; m.w. 125.13; liq.; b.p. dl. 161, l. 158.

piperonal (3, 4-methylenedioxybenzaldehyde; protocatechualdehyde methylene ether; heliotropin). $CH_2(O_2)C_6H_3CHO$; m.w. 150.05; wh.-yel. cr. f.w.; m.p. 37; b.p. 263; s.w.; s.al.

piperonyl alcohol (3, 4-methylenedioxybenzyl alcohol). $CH_2(O_2)C_6H_3CH_2OH$; m.w. 152.06; cr.; m.p. 51; s.w.; s.al.

piperonylic acid (3, 4-methylenedioxybenzoic acid; protocatechuic acid methylene ether). $CH_2(O_2)C_6H_3COOH$; m.w. 165.04; need. f.w. or al.; m.p. 228; s.w.; s.al.

piperylene. See 1, 3-pentadiene.

pipette. Cylindrical glass tube used to deliver measured small amounts of liquids, filled by sucking the liquid into it.

pistachia galls. See gum, mastic.

pistachio oil. See oil, pistachio.

pistacite. See epidote.

pitch. Black or dark brown, solid or semi-solid residue obtained by partial evaporation or fractional distillation of tars and tar products; number of threads on a screw per inch; size of gear teeth; frequency, or number of vibrations per second, of sound; in pile floor covering, the number of pile ends per inch of width.

pitch, Burgundy. An opaque, yellowish-brown resin obtained from the European silver fir or the Norway spruce; soluble in acetone and alcohol and used in medicine to make plasters.

pitch, coal tar. Dark br.-black amorph. solid; residue from distillation of coal tar; sp.gr. 1.07; m.p. 60-120; s.al.; used in water proof and acid-proof paints, roofing and insulating compositions, and in preserving wood.

pitch, coke. Black amorphous solid obtained from distillation of tar; used in manufacture of water gas and as a fuel.

pitch, glance. See glance pitch.

pitch, hardwood. Residue from destructive distillation of hardwood, used as a wood preservative and disinfectant.

pitch, palm. Black amorphous solid; sp.gr. 1.045-1.050; m.p. about 95; s. benzene; used in manufacture of varnishes; lubricant; in electrical insulation.

pitch, pine (pitch prime). Black amorphous solid; sp.gr. 1.105; m.p. 82; used in shoemaker's wax; preserving timber.

pitch prime. See pitch, pine.

pitch, stearine. See stearine pitch.

pitch, vegetable. Residue obtained from distillation of vegetable materials; used in manufacture of varnishes, paper, insulation.

pitch, wool. See wool pitch

pitchblende. See uraninite.

pitching-point. Point at which temperature ceases to rise and begins to fall and/or fumes are evolved from the surface of the residue in the flask.

Pitot tube. Tube used for measuring flow velocity in streams of fluids.

pitting. Localized corrosion.

pitting factor. Maximum corrosive penetration divided by average penetration.

pituitrin. An extract from the posterior lobe of the pituitary gland, containing two known hormones, vasopressin and oxytocin, the former constricting the capillaries, the latter used to induce uterine contractions in childbirth.

pivalaldehyde (2, 2-dimethylpropanal; trimethyl acetaldehyde). $(CH_3)_3CCHO$; m.w. 86.08; liq.; m.p. 3; b.p. 75; s.al.

pivaldehyde, oxime (trimethylacetaldoxime). $(CH_3)_3CCH{:}NOH$; m.w. 101.09; cr.; m.p. 41; b.p. 65 [20]; s.al.

pivalic acid (2, 2-dimethylpropanoic acid; α, α-dimethylpropionic acid; trimethylacetic acid). $(CH_3)_3CCOOH$; m.w. 102.08; col. need.; m.p. 35.5; b.p. 163.8; s.al.

pivalic acid, methyl ester (methyl pivalate). $(CH_3)_3CCOOCH_3$; m.w. 116.09; col. liq.; b.p. 102; s.w.; s.al.

placing sand. See sand, placing.

plagionite. Dark green mineral found in lead and antimony veins; sp.gr. 5.3-6.5

Planck's constant. A constant, which multiplied by the frequency of radiation gives the quantity of energy contained in one quantum.

Planck's quantum. A measure of action equal to 6.554×10^{-27} erg second.

Planck-Einstein equation. Equation for conversion of electron energy into x-ray quanta.

Planckian color. Wave length intensity distribution radiated by a black body at a certain temperature.

Planckian radiator. Ideal black body.

plane-family. Set of all parallel atomic planes in a crystal.

plane of union. Common plane of union of two components of a twin crystal.

plankton. Floating or non-swimming small forms of sea life occurring in other than shore water or the sea depths, including animalculae, small jellyfish, algae, etc.

plant, chemical. See chemical plant.

plant hormone. See phytamin.

Plaskon. Urea-formaldehyde molding resin, thermosetting, translucent, colored or colorless and resistant to ketones, alcohols, esters, hydrocarbons and oils.

plasma. Fluid portion of the blood; region of electric discharge in rare gas having electrons and positive ions whose charges nearly neutralize each other.

plasmoid. Term applied to luminous forms seen in high vacuum tubes operating under high frequencies.

plasmolysis. Loss of water from a cell, causing it to shrink and die, due to the greater tonicity of the medium than the cell interior.

Plastacele. A cellulose acetate plastic, available in transparent, translucent, and opaque, colored and colorless forms, thermoplastic, of good molding and machining properties, resistant to hydrocarbons and oils.

plaster. Paste of lime, sand, water; plaster of Paris (q.v.).

plaster of Paris. $CaSO_4 \cdot \frac{1}{2}H_2O$; partially dehydrated gypsum; wh. powd.; used in building, making casts, etc.

plastic. Any substance that can be molded. See also plastic solid.

Plastic "A". Glyceryl tribenzoate.

plastic solid. A solid which does not deform under a shearing stress until latter attains a critical value (yield stress) when the solid deforms so easily or quickly that, except for inertia effects, the stress is never greater than the yield stress.

plastic, turnery. See turnery plastic.

plastic "wood." See "Necol plastic wood" and magnesium oxychloride cement.

Plasticalk. A natural nonoxidising plastic resin used as a substitute for putty, which does not dry, crack, or shrink; used for cementing glass to glass, metal, wood, for calking and other adhesive purposes.

plasticity, water of. Amount of water needed to give a clay maximum plasticity.

plasticizer. An ingredient which is added to a plastic to soften, increase toughness, or otherwise modify the properties of the binder, e.g. tricresyl phosphate, camphor, or a heavy oil.

Plasticizer 3GH. $(C_8H_{11}COO)_2{:}[C_2H_4(C_2H_4O)_2]$; m.w. 346.45; sp.gr. 0.9947; b.p. 353.0; i.w.

plastico-viscous solid. One for which no deformation occurs for values of the shearing stress below the yield stress and, for values of the shearing stress above that value, deforms continuously at a rate of shear which is a function of the shearing stress.

plastids. Microscopic protein bodies found in tissues of all chlorophyllous plants.

plastifying point. Melting point of a swollen body in a swelling medium.

Plastikon. A rubber sealing putty that is flexible, does not crack upon long standing, and adheres well to wood and concrete.

plasto-rubber. See rubber, plasto-.

plastomer. True thermo-setting plastic.

plastometer. Device for forcing a material thru a small tube under a definite pressure and measuring the time interval to determine mobility.

plateau effect. Flattening-out of the curve of tensile strength plotted against time of vulcanization.

platinic. Designation for compounds containing tetravalent platinum.

platinic acid, bromo-. $H_2PtBr_6 \cdot 9H_2O$; m.w. 838.88; monocl. red deliq.; m.p. <100 d.; s.w.; s.al.

platinic acid, chloro-. $H_2PtCl_6 \cdot 6H_2O$; m.w. 518.08; red-br. pr., deliq.; s.g. 2.431; m.p. 60; s.w.; s.al.

platinic acid, iodo-. $H_2PtI_6 \cdot 9H_2O$; m.w. 1120.91; monocl. blk., deliq.; m.p. <100; s.w. d.

platinite. An alloy of iron 58.85, nickel 46, and carbon 0.15; sp.gr. 8.2; m.p. 1470; like platinum, it has the same coefficient of expansion as glass, and is used where metal must be sealed into glass.

platinous. Designation for compounds containing divalent platinum.

platinum. Pt; at. wt. 195.23; cub. silv. metal; s.g. 21.45; m.p. 1773.5; b.p. 4300; i.w.; a precious metal; used as a catalyst and for jewelry.

platinum arsenide (sperrylite). $PtAs_2$; m.w. 345.09; cub. tin wh.; s.g. 10.602; m.p. >800 d.; i.w.

platinum black (platinum mohr; platinum sponge). Finely divided platinum; sp.gr. 15.8-17.6; blk. powd.; a catalyst.

platinum bromide, tetra- (ic). $PtBr_4$; m.w. 514.89; dk. br.; s.g. 5.69; m.p. d. 180; s.w.; s.al.

platinum chloride, di- (ous). $PtCl_2$; m.w. 266.14; olive grn.; s.g. 5.87 [11] (6.05); m.p. d. 581; i.w.; i.al.

platinum chloride, tetra- (ic). $PtCl_4$; m.w. 337.06; br.-red. cr.; m.p. d. 370; s.w.

platinum bromide, di- (ous). $PtBr_2$; m.w. 355.06; br.; s.g. 6.65; m.p. d. 250; i.w.

platinum chloride, tetra- (ic) (salt of Norton). $PtCl_4 \cdot 5H_2O$; m.w. 427.14; monocl. red; s.g. 2.43 ($8H_2O$); m.p. $-H_2O$, 100; s.w.; s.al.

platinum cyanide. $Pt(CN)_2$; m.w. 247.25; yel. br. cr.; i.w.; i.al.

platinum fluoride, di-. PtF_2; m.w. 233.23; yelsh. grn.; i.w.

platinum fluoride, tetra-. PtF_4; m.w. 271.23; yel.-lt. br. cr., deliq.; s.w. d.

platinum hydroxide(ic). $Pt(OH)_4$; m.w. 263.26; yel.-br.; m.p. $-H_2O$, 120; i.w.

platinum hydroxide(ic). $Pt(OH)_4 \cdot 2H_2O$; m.w. 299.29; white; m.p. d. <100; i.w.

platinum hydroxide(ous). $Pt(OH)_2$; m.w. 229.25; blk.; i.w.

platinum hydroxide(ous). $Pt(OH)_2 \cdot 2H_2O$; m.w. 265.28; blk.; m.p. $-2H_2O$, 100; i.w.

platinum iodide, di-. PtI_2; m.w. 449.07; blk.; s.g. 6.4; m.p. d. 300-350; i.w.

platinum iodide, tetra- (ic). PtI_4; m.w. 702.91; amor. br.; m.p. d. 370; s.w. d.; s.al.

platinum mohr. See platinum black.

platinum, native. Platinum as it occurs naturally; cub., silvery-wh.; sp.gr. 13.35-19.00; hardness 4-6.

platinum oxide(ous, ic). Pt_2O_4; m.w. 649.69; blk.; i.w.

platinum oxide, di- (ic). PtO_2; m.w. 227.23; blk.; m.p. 430; i.w.

platinum oxide, di- (ic). $PtO_2 \cdot 2H_2O$; m.w. 245.25; blk.; m.p. $-H_2O$, 100; i.w.

platinum oxide, di- (ic). $PtO_2 \cdot 2H_2O$; m.w. 263.26; yel. br.; m.p. $-H_2O$, 100; i.w.

platinum oxide, di- (ic). $PtO_2 \cdot 3H_2O$; m.w. 281.28; ochre; i.w.

platinum oxide, di- (ic). $PtO_2 \cdot 4H_2O$; m.w. 299.29; yel. need.; i.w.

platinum oxide, mon- (ous). PtO; m.w. 211.23; vlt.-blk.; m.p. d. 550; i.w.

platinum phosphate, pyro-. PtP_2O_7; m.w. 369.27; grn.-yel.; s.g. 4.85; m.p. d. 600; s.w.

platinum sponge. See platinum black.

platinum sulfate. $Pt(SO_4)_2 \cdot 4H_2O$; m.w. 459.41; yel. pl.; s.w.; s.al.

platinum sulfate, sesqui-. $Pt(H_2O)(SO_4)_2H \cdot 4H_2O$; m.w. 478.44; tricl. or. pr.; s.w.

platinum sulfide, di- (ic). PtS_2; m.w. 259.35; blk.; s.g. 7.22; i.w.

platinum sulfide, mono- (ous). PtS; m.w. 227.29; blk.; s.g. 8.847; i.w.

platinum sulfide, sesqui-. Pt_2S_3; m.w. 486.64; gray; s.g. 5.52; i.w.

plattnerite. See lead oxide, di-.

pleochroism (polychroism). Different absorption colors seen along different crystal axes. See also dichroism.

pleonaste (iron-magnesium spinel). A mineral, $(Mg,Fe)O \cdot Al_2O_3$; br.. blk., dk. grn.; sp.gr. 3.5-3.6.

Plessy's green. Green pigment. See chromium phosphate.

Plexiglas. Synthetic acrylate resin.

Plexigum. Synthetic acrylate resin having rubber-like properties.

Plioform. A plastic derived from rubber, available in lacquers and in molded and powdered forms, transparent, translucent, opaque and colored, thermoplastic, of good machining qualities, and good resistance to acids, alkalies, alcohols, ketones and esters.

Pliolite. A polymerized rubber containing no chlorine or chlorine derivatives.

Plotnikow effect. Longitudinal scattering of light rays.

plumbago. See graphite.

plumbane, tetramethyl-. See lead, tetramethyl-.

plumbane, tetraphenyl-. See lead, tetraphenyl-.

plumbate. Salt of lead dioxide; the negative group, $PbO_3^{=}$.

plumbic. Designation for lead compounds in which the lead is tetravalent, e.g. PbO_2.

plumbojarosite. Natural $PbFe_6(OH)_{12}(SO_4)_4$.

plumping. Process of causing swelling of protein matter in skins during leather manufacture.

Pluviusin. Synthetic urea resin.

ply. One of a number of superimposed sheets or layers.

pneumatic trough. Apparatus for collecting gases in bottles or containers by displacing water or mercury from them.

podophyllin (resin podophyllum). Extract of rhizome or roots of p. peltatum; yel.; s.al.; used in medicine.

pogy oil. See oil, menhaden.

Poinsot motion. Motion of rigid body, fixed at one point, acted on by forces whose resultant is zero.

Poinsot precession. Precessional rotation of a body whose three principal axes have different moments of inertia.

point-function. Continuous function of the position of a point in space.

poise. A sliding weight on a weighing apparatus, its position on the scale indicating the weight; a unit of viscosity.

Poiseville law. Law describing rate of flow thru a capillary.

poison. Material which retards or stops action of a catalyst; material able to produce a morbid, noxious, or dangerous effect upon life or living organisms.

poison nut. See nux vomica.

poison tobacco. See henbane.

Poisson equation. Differential equation for relation of potential function to density at any point.

Poisson ratio (rho ratio). Ratio of the transverse contraction per unit dimension of a bar of uniform cross-section to its elongation per unit length, when subjected to a tensile stress.

polar axis. Axis at right angles to rotating plane.

polar compound. Compound composed of ions in the solid state as well as in solution, possessing an electric

moment; held together in the compound by electrostatic forces.

polar linkage. Electrostatic attraction between oppositely charged ions.

polar vector. A vector having linear action in a particular direction.

polarimeter. An instrument for measuring the degree of optical rotation.

polariscope. See polarimeter.

polarity. The quality of the electrical charge, i.e. whether they are positive or negative, on particles or electrodes.

polarizability. See deformability.

polarization. Any change, produced at an electrode by electrolysis, which causes its potential to differ from its reversible or normal value, usually due to gas formation at the electrodes; the deformation of the electric fields of adjacent anions, this effect seldom occurring between cations.

polarization, orientation. See orientation polarization.

polarization voltage (polarization potential). Temporary change in the difference of potential between an electrode and the electrolyte in contact with it, because of the passage of a current to or from the electrode.

polarized light. Light in which all oscillations are in one plane.

polarograph. Instrument which continuously increases potential across a cell and simultaneously records the amount of current passing thru the cell.

Polenske number. Number of cubic centimeters of 0.1N alkali required in titrating the water-insoluble volatile acids from a five gram sample of a fat or oil.

polianite. See pyrolusite.

polish. See gloss, specular.

polishing rouge. A fine polishing abrasive, an artificial hydrated oxide of iron, red in color.

Pollopas. A urea-formaldehyde plastic used in manufacturing organic glasses; sp.gr. 1.44.

pollards. See shorts.

pollen. Tiny grains formed in anthers of seed bearing plants, each grain being a mature microspore.

pollucite. A mineral, $2Cs_2O \cdot 2Al_2O_3 \cdot 9SiO_2 \cdot H_2O$; cub., col.; sp.gr. 2.868-2.901; hardness 6.5.

polonium. Po; at. wt. 210; at. no. 84; radioactive element first obtained from pitchblende by Mme. Curie.

poly-. Prefix signifying *many*, or *several*.

polyazo dye. Azo dye (q.v.) containing two, three or four N=N linkages.

polybasic acid. Acid which contains more than one ionizable hydrogen atom and which is able to neutralize two or more molecules of a base such as sodium hydroxide, e.g. H_2SO_4.

polybasite. Antimony, silver sulfide; s.g. 6.2; blk.

polychloropentanes. A chlorinated hydrocarbon containing 65.4% chlorine; sp.gr. 1.385; a penetration-solvent, such as removing wax and asphalt from oil well equipment.

polychroism. See pleochroism.

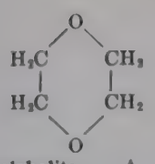
polydymite. See nickel sulfide(ous, ic).

polyenoid system. Conjugated olefin and aromatic hydrocarbon containing the group —C=C—C=C— which may form addition compounds by direct addition of the ions of the reagent in the 1:2, 1:4, etc. positions; or these ions may be initially attached to two adjacent atoms of carbon and then migrate to alternate atoms of the conjugated chain.

polyacrylic resin. Synthetic resin of acrylic ester or methyl acrylic ester type.

polydisperse. Having vari-sized particles.

polyglycol (dioxane). Derivative of the condensation of two molecules of ethylene glycol with the elimination of one or two molecules of water, e.g.



polyhalite. A mineral, $MgSO_4 \cdot (CaSO_4)_2 \cdot K_2SO_4 \cdot 2H_2O$.

polyheteroatomic ring. Organic compound containing a ring of five or six members which includes two or more non-carbon atoms of the same or different elements.

polyhydric alcohol. An alcohol that contains more than one hydroxy group, e.g. $CH_2OH \cdot CH_2OH$.

polymer. A product of polymerization (q.v.).

polymer, mixed. See copolymer.

polymer, simple linear. Consisting of linear or one-dimensional molecules of considerable length, e.g. cellulose.

Polymerin. A resin finish which polymerizes to a hard nonchipping coat upon the application of heat, applied to metals by spraying or dipping and used in high-speed coating operations.

polymerization. Chemical change resulting in the formation of a new compound whose molecular weight is a multiple of that of the original substance; a reaction involving a successive addition of a large number of relatively small molecules (monomers) to form the final compound or polymer.

polymerized oil. See blown oil.

polymorphic. See heteromorphic.

polymorphism. Existance of a solid substance in more than one physical modification.

polymorphous. Capable of existing in more than one crystalline form.

polynomial. A function of the form $a_0x^m + a_1x^{m-1}. \ldots$

polynuclear hydrocarbon. Hydrocarbon whose molecules contain two or more nuclei, e.g. diphenyl or naphthalene.

polyoxymethylene (trioxymethylene; paraformaldehyde; metaformaldehyde). $(CH_2O)_x$; m.w. $(30.02)_x$; wh. need.; m.p. 64; s.w.; s.al.

polypeptide. A molecule consisting of several amino acids linked together in peptide linkage (q.v.).

polyphase. Consisting of two or more phases or electrical circuits.

polyploid. Term applied to organisms with more than two haploid sets of chromosomes in its somatic cells.

polysaccharide. Complex natural carbohydrate of general formula $(C_6H_{10}O_5)_n$ in which n is a large number, e.g. cellulose.

polysaccharose. Sugar of high molecular weight, of formula $(C_6H_{10}O_5)_n$ or $(C_5H_8O_4)_n$, e.g. inulin.

polysomy. Condition where one or more chromosomes, but not the entire set, are present in polyploid state.

polystyrene resin. Clear, colorless, highly thermoplastic molding material made by polymerizing styrene or vinyl benzene.

polysulfide. Sulfide solution containing dissolved sulfur.

polyterpene. Complex terpene of formula $(C_5H_8)_n$.

polytropic. Referring to change in which $(p \times v)^n$ is constant.

polyvinyl acetate. See vinyl acetate, polymerized.

polyzime (polyzime "p"). Amylolytic enzyme prepared from aspergillus oryzae; sp.gr. 1.06; liq. or yel. powd.; optimum conditions, 82° C. and pH 5.4.

pomace (pummace). Residue from fish and castor bean after extraction of oil.

pomade. Fats containing essential oils extracted from flowers in the cold.

Ponolith (Sunolith; Superlith). A lithopone pigment.

Pontianak gum. See gum, Pontianak.

Pontianik resin. See gum, Pontianak.

poppy oil. See oil, poppy.

poppyseed oil. See oil, poppy.

populin (anhydrous synthetic) (benzoylsalicin). $C_{20}H_{22}O_8$; m.w. 390.17; pr.; m.p. 178-9.

populin (benzoylsalicin). $C_{20}H_{22}O_8 \cdot 2H_2O$; m.w. 426.20; col. need.; m.p. anh. 180; s.al.

porcelain. A ceramic ware formed from baked clay glazed with a fusible substance.

porcelain clay. See clay.

pore water. Water remaining in pores of clay when shrinkage has stopped but which is removed by heating at 100° C.

porosity. Amount of air space expressed as percentage of total volume.

porphyrin. Pigment obtained by removing iron from haeme or haematin.

porphyrites. Crystalline igneous rocks.

porphyry. Variety of feldspar.

porpoise oil. See oil, porpoise.

porter yarn. See yarn, porter.

positive catalysis. Acceleration of reaction velocity by means of a catalyst.

positive crystal. Uniaxial, birefringent crystal whose extraordinary wave has the lesser velocity.

positive electron. See positron.

positive integer (natural number). An ordinary number, e.g. 1, 3, n.

positive myotrope. See myotrope, positive.

positron (positive electron; antielectron). A charge having a mass equal to that of an electron, but being positive; the electrical counterpart of the electron.

possolanic. Term applied to a substance not necessarily cementitious itself, but containing constituents that will combine with calcium hydroxide at ordinary temperatures, in the presence of moisture, to form stable cementitious materials.

potash. See potassium salts.

potash bulbs. See Liebig bulbs.

potash lye. See potassium hydroxide.

potash salts. See potassium salts.

potash soap. Soft soap made with potash lye.

potassa. See potassium hydroxide.

potassium. K; at. wt. 39.096; cub. silv. metal; s.g. 0.86 [20]; 0.83 [63]; m.p. 62.3; b.p. 760; s.w. d. to KOH + H_2; s.al.; one of the alkali metals.

potassium acetate. $KC_2H_3O_2$; m.w. 98.12; lust. wh. powd., deliq.; s.g. 1.8; m.p. 292; s.w.; s.al.

potassium acetate, acid. $KH(C_2H_3O_2)_2$; m.w. 158.15; need. or pl.; m.p. 148; b.p. d. 200; s.al.

potassium acetylsalicylate. $KC_9H_7O_4 \cdot 2H_2O$; m.w. 254.19; m.p. 65.

potassium aluminate. $K_2Al_2O_4 \cdot 3H_2O$; m.w. 250.19; col. cr.; s.w. d.; i.al.

potassium amide. KNH_2; m.w. 55.12; yel. grn.; m.p. 335; b.p. subl. 400.

potassium ammonium tartrate. $KNH_4C_4H_4O_6$; m.w. 205.17; wh. cr. powd.; s.w.

potassium amyl xanthate. $C_6H_{11}O \cdot CS_2K$; m.w. 202.3; pale yellowish green powd.; s.w.; s.al.; a mineral ore flotation agent.

potassium antimonate, meta-. $KSbO_3$; m.w. 208.86; wh. powd.; i.w.; i.al.

potassium antimonate, pyro-, acid. $K_2H_2Sb_2O_7 \cdot 4H_2O$; m.w. 507.80; gran., wh. cr. powd.; s.w.

potassium antimonyl tartrate (tartar emetic). $KSbOC_4H_4O_6 \cdot \frac{1}{2}H_2O$; m.w. 333.90; rhomb. col.; s.g. 2.607; m.p. $-\frac{1}{2}H_2O$, 100; s.w.; i.al.

potassium arsenate, ortho- (monobasic). KH_2AsO_4; m.w. 180.05; tetr. col.; s.g. 2.867; m.p. 288; s.w.; i.al.

potassium arsenate, ortho- (dibasic). K_2HAsO_4; m.w. 218.14; col. cr.; s.w.; i.al.

potassium arsenate, ortho- (tribasic). K_3AsO_4; m.w. 256.23; col. deliq. need.; s.w.; s.al.

potassium arsenite, meta-. $KAsO_2$; m.w. 146.03; wh. powd., hyg.; s.w.; s.al.

potassium arsenite, meta-, acid. $KH(AsO_2)_2 \cdot H_2O$; m.w. 271.98; s.w. s.al.

potassium arsenite, ortho-. K_3AsO_3; m.w. 240.23; col. need.; s.w.; s.al.

potassium aurate. $KAuO_2 \cdot 3H_2O$; m.w. 322.35; lt. yel. need.; s.w.; s.al.

potassium auricyanide. $KAu(CN)_4 \cdot 1\frac{1}{2}H_2O$; m.w. 367.36; col. tabl.; m.p. d. 200; s.w.; s.al.

potassium aurocyanide (cyanoaurate). $KAu(CN)_2$; m.w. 288.32; rhomb. col.; s.w.; s.al.

potassium benzoate. $KC_7H_5O_2 \cdot 3H_2O$; m.w. 214.19; cr. wh. powd.; s.w.; s.al.

potassium borate, meta-. $K_2B_2O_4$; m.w. 163.84; monocl. col.; m.p. 947; s.w.

potassium borate, tetra-. $K_2B_4O_7 \cdot 5H_2O$; m.w. 323.56; monocl. or hex. pr.; m.p. (anh.) 1.74; s.w.

potassium borotartrate. $KC_4H_4BO_7$; m.w. 213.95; wh. cr. powd.; s.g. 1.832; s.w.

potassium bromate. $KBrO_3$; m.w. 167.02; trig. col.; s.g. 3.27 [17.5]; m.p. 370 d.; s.w.; s.al.

potassium bromide. KBr; m.w. 119.02; cub. col. al. hyg.; s.g. 2.75 [25]; m.p. 730; b.p. 1380; s.w.; s.al.

potassium bromoaurate. $KAuBr_4$; m.w. 555.96; rhomb. red-br.; s.w.; s.al.

potassium bromoaurate. $KAuBr_4 \cdot 2H_2O$: m.w. 592.00; monocl.; s.w.

potassium bromoplatinate. K_2PtBr_6; m.w. 752.93; cub. dk. red-br.; s.g. 4.66 [24]; m.p. d. >400; s.w.; i.al.

potassium bromoplatinite. K_2PtBr_4; m.w. 593.09; rhomb. br.; s.w.

potassium bromoplatinite. $K_2PtBr_4 \cdot 2H_2O$; m.w. 629.13; rhomb. blk.; m.p. $-H_2O$ vac.; s.w.

potassium butyl xanthate. $C_4H_9O \cdot CSSK$; m.w. 193.3; pale yellowish green powd.; s.w.; s.al.; a mineral ore flotation agent.

potassium cacodylate. $K(CH_3)_2AsO_2 \cdot H_2O$; m.w. 194.09; wh. cr.; s.w.; s.al.

potassium carbonate. K_2CO_3; m.w. 138.20; monocl. col., deliq.; s.g. 2.29; m.p. 891; s.w.; i.al.

potassium carbonate. $K_2CO_3 \cdot 2H_2O$; m.w. 174.23; rhomb.; s.w.

potassium carbonate (trihydrate). $2K_2CO_3 \cdot 3H_2O$; m.w. 330.45; monocl. col.; s.g. 2.043; s.w.; i.al.

potassium carbonate, acid. $KHCO_3$; m.w. 100.11; monocl. col.; s.g. 2.17; m.p. d. 100-200; s.w.; i.al.

potassium carbonate, bi-. See potassium carbonate, acid.

potassium carbonyl. $K_6C_6O_6$; m.w. 402.60; gray-red.; m.p. exp.

potassium chlorate. $KClO_3$; m.w. 122.56; monocl. col.; s.g. 2.32; m.p. 368.4; b.p. d. 400; s.w.; s.al.

potassium chlorate, per-. $KClO_4$; m.w. 138.56; rhomb. col.; s.g. 2.52 [15]; m.p. d. 400; s.w.; i.al.

potassium chloride (sylvite). KCl; m.w. 74.56; cub. col.; s.g. 1.984; m.p. 776; b.p. subl. 1500; s.w.; s.al.

potassium chlorite, hypo-. KClO; m.w. 90.56; in soln. only; s.w.

potassium chloroaurate. $KAuCl_4$; m.w. 378.13; monocl. yel.; m.p. d. 357; s.w.; s.al.

potassium chlorochromate. $KOClCrO_3$; m.w. 174.57; monocl. red.; s.g. 2.497; s.w. d.

potassium chloroiridate. K_2IrCl_6; m.w. 484.04; cubic. blk.; s.g. 3.546; s.w.; i.al.

potassium chloropalladate. K_2PdCl_6; m.w. 397.64; cub. red.; s.g. 2.738; s.w. d.; i.al.

potassium chloropalladite. K_2PdCl_4; m.w. 326.73; tetr. red-br. (cub. yel.); s.g. 2.67; m.p. d. 105; s.w.; i.al.

potassium chloroplatinate. K_2PtCl_6; m.w. 486.17; cub. yel.; s.g. 3.499 [24]; m.p. d. 250; s.w.; i.al.

potassium chloroplatinite. K_2PtCl_4; m.w. 415.26; tetr. red-br.; s.g. 3.30; s.w.; i.al.

potassium chlororhodite. $K_3RhCl_6 \cdot 3H_2O$; m.w. 487.00; tricl. red.; s.g. 3.291; s.al.

potassium chlororhodite, penta-. K_2RhCl_5; m.w. 358.40; rhomb. red.; s.w.; i.al.

potassium chlorostannate. K_2SnCl_6; m.w. 409.64; cub. col.; s.g. 2.71; s.w.

potassium chromate (tarapacaite). K_2CrO_4; m.w. 194.21; rhomb. yel.; s.g. 2.732 [18]; m.p. 971; s.w.; i.al.

potassium chromate, bi-. See potassium chromate, di-.

potassium chromate, di-. $K_2Cr_2O_7$; m.w. 294.22; monocl. or tricl. red.; s.g. 2.69; m.p. tr. 236, 398; s.w.; i.al.

potassium chromate, per-. K_2CrO_8; m.w. 297.31; cub. br.; m.p. d. 170; s.w.; i.al.

potassium chromicyanide. $K_3Cr(CN)_6$; m.w. 325.36; monocl. yel.; s.g. 1.71; s.w.; i.al.

potassium citrate. $K_3C_6H_5O_7 \cdot H_2O$; m.w. 324.35; col.; s.g. 1.98; m.p. d. 230; s.w.; s.al.

potassium citrate, monobasic. $KH_2(C_6H_5O_7)$; m.w. 230.15; wh. cr. powd.; s.w.

potassium cobalt malonate. $K_2Co(C_3H_2O_4)_2$; m.w. 341.17; s.g. 2.234.

potassium cobalt nitrite. See cobalt potassium nitrite.

potassium cobalticyanide. $K_3Co(CN)_6$; m.w. 332.29; monocl. yel.; s.g. 1.906; s.w.; i.al.

potassium cobaltocyanide. $K_4Co(CN)_6$; m.w. 371.39; violet need.; s.w.; i.al.

potassium cyanate. KCNO; m.w. 81.11; need. col.; s.g. 2.048; s.w.; i.al.

potassium cyanide. KCN; m.w. 65.11; cub. col., wh. gran., deliq., extr. pois.; s.g. 1.52 [16]; m.p. 634.5; s.w.; s.al.

potassium diamyl dithiocarbamate. $KSCSN(C_5H_{11})_2$; m.w. 271.40; reddish yel.; decomposes on heating.

potassium disuccinate. $KH(C_4H_5O_4)_2$; m.w. 274.19; monocl.; s.g. 1.56; m.p. 162.

potassium dithionate. $K_2S_2O_6$; m.w. 238.32; trig. col.; s.g. 2.278; s.w.; i.al.

potassium ethylsulfate. $KC_2H_5SO_4$; m.w. 164.20; monocl. wh.; s.g. 1.843; s.w.; s.al.

potassium ethyl xanthate. See potassium xanthogenate.

potassium feldspar. See orthoclase.

potassium ferric oxalate. $KFe(C_2O_4)_2 \cdot 2\frac{1}{2}H_2O$; m.w. 315.98; br. cr.; s.w.; i.al.

potassium ferric oxalate. $K_3Fe(C_2O_4)_3 \cdot 3H_2O$; m.w. 491.19; monocl.; m.p. $-3H_2O$, 100; b.p. d. 230; s.w.; i.al.

potassium ferricyanide. $K_3Fe(CN)_6$; m.w. 329.19; s.g. 1.894 [17]; s.w.; i.al.

potassium ferrocyanide. $K_4Fe(CN)_6 \cdot 3H_2O$; m.w. 422.33; monocl. lem. yel.; s.g. 1.85 [17]; m.p. $-3H_2O$, 70; s.w.; i.al.

potassium fluoborate. KBF_4; m.w. 125.92; rhomb. or cub. col.; s.g. 2.50; m.p. d. 500; s.w.; s.al.

potassium fluogermanate. K_2GeF_6; m.w. 264.80; hex. wh.; m.p. 730; b.p. *ca.* 835; s.w.

potassium fluomanganite. K_2MnF_6; m.w. 247.13; hex. tab., yel.

potassium fluoresceinate. $K_2C_{20}H_{10}O_5$; m.w. 408.28; red powd.; s.w.

potassium fluoride. KF; m.w. 58.10; cub. col. deliq.; s.g. 2.48; m.p. 880; b.p. 1500; s.w.; i.al.

potassium fluoride. $KF \cdot 2H_2O$; m.w. 94.13; monocl. pr., deliq.; s.g. 2.454; m.p. 41; s.w.; i.al.

potassium fluoride, acid. KHF_2; m.w. 78.11; cub. col.; s.w.; i.al.

potassium fluoride, bi-. See potassium fluoride, acid.

potassium fluosilicate. K_2SiF_6; m.w. 220.26; hex. or cub. col.; s.g. hex. 3.08, cub. 2.665 [17]; s.w.; i.al.

potassium fluostannate. $K_2SnF_6 \cdot H_2O$; m.w. 328.92; monocl. pr.; s.g. 3.053; s.w.; i.al.

potassium fluosulfonate. $KFSO_3$; m.w. 138.16; short, thick pr.; m.p. 311; s.w.

potassium fluotitanate. $K_2TiF_6 \cdot H_2O$; m.w. 258.12; sm. lust. leaf., wh.; m.p. $-H_2O$, 32; 780; s.w.

potassium fluozirconate. K_2ZrF_6; m.w. 283.42; monocl. col.; s.g. 3.48; s.w.

potassium formate. $KCHO_2$; m.w. 84.11; rhomb. col.; deliq.; s.g. 1.91; m.p. 167.5; s.w.; s.al.

potassium germanate, di-. $K_2Ge_2O_5$; m.w. 303.40; wh. cryst.; s.g. 4.31 [21.5]; m.p. >83; s.w.

potassium germanate, meta-. K_2GeO_3; m.w. 198.80; wh. cryst.; s.g. 3.40 [21.5]; m.p. 823; s.w.

potassium germanate, tetra-. $K_2Ge_4O_9$; m.w. 512.60; wh. cryst.; s.g. 4.12 [21.5]; m.p. 1033; s.w.

potassium glycerophosphate. $C_3H_7O_3PO(OK)_2$; m.w. 248.27; col. to sl. yelsh. mass; s.w.; s.al.

potassium gold chloride. See gold potassium chloride.

potassium guaiacol sulfonate (orthocoll; thiocol). $C_6H_3OCH_3OHSO_3K$; m.w. 242.22; wh. powd.; s.w.; s.al.; used in medicine.

potassium hydride. KH; m.w. 40.11; wh. need.; s.g. 0.80.

potassium hydrosulfide. KHS; m.w. 72.17; rhomb. yel. deliq.; s.g. 2.0; m.p. 455; s.al.

potassium hydroxide. KOH; m.w. 56.11; rhomb. deliq., wh.; s.g. 2.044; m.p. 380; b.p. 1320; s.w.; s.al.

potassium iodate. KIO_3; m.w. 214.02; monocl. col.; s.g. 3.89; m.p. 560; b.p. d. >100; s.w.; i.al.

potassium iodate, acid. $KH(IO_3)_2$; m.w. 389.95; monocl.; s.w.

potassium iodate, per-. KIO_4; m.w. 230.02; tetr. col.; s.g. 3.618 [12]; m.p. 582; b.p. −O, 300; s.w.

potassium iodide. KI; m.w. 166.02; cub. col. or wh. gran.; s.g. 3.13; m.p. 773; b.p. 1330; s.w.; s.al.

potassium iodide, tri-. KI_3; m.w. 419.86; monocl. dk. bl., deliq.; s.g. 3.498; m.p. 45; b.p. d. 225; s.w.; s.al.

potassium iodobromide. KBr·IBr; m.w. 325.85; rhomb.; m.p. 60; b.p. d. 180.

potassium iodochloride. KCl·ICl_3; m.w. 307.85; rhomb. yel.; s.g. 1.76 [45].

potassium iodoiridite. K_3IrI_6; m.w. 1071.92; grn. cr.; s.w.; i.al.

potassium iodoplatinite. K_2PtI_6; m.w. 1034.95; cub. blk.; s.w.; s.al.

potassium isovalerate. $KC_5H_9O_2$; m.w. 140.17; wh. to yelsh., hyg. cr.; s.w.

potassium lactate. $KC_3H_5O_3 + xH_2O$; m.w. 128.14 $+xH_2O$; col. to yelsh. syrupy liq.; s.w.; s.al.

dl-potassium lithium tartrate. $KLiC_4H_4O_6 \cdot H_2O$; m.w. 212.09; monocl.; s.g. 1.610; s.w.

potassium malate. $K_2C_4H_4O_5$; m.w. 210.23; col., viscid mass; s.w.

potassium manganate. K_2MnO_4; m.w. 197.13; rhomb. grn.; m.p. d. 190.

potassium manganate, per-. $KMnO_4$; m.w. 158.03; rhomb. purple; s.g. 2.703; m.p. d. <240; s.w.

potassium manganicyanide. $K_3Mn(CN)_6$; m.w. 328.28; monocl. red.; s.w.

potassium manganocyanide. $K_4Mn(CN)_6 \cdot 3H_2O$; m.w. 421.42; tetr. bl.; s.w.

potassium methane disulfonate. $KSO_3CH_2KSO_3$; monocl.; s.g. 2.376.

potassium methyl sulfate. $2KCH_3SO_4 \cdot H_2O$; m.w. 318.38; wh. cr.; s.w.; s.al.

potassium mica. See muscovite.

potassium molybdate. K_2MoO_4; m.w. 238.20; wh. deliq. powd.; s.g. lq. 2.342 [964]; m.p. 919; s.w.; i.al.

potassium molybdate. $K_2MoO_4 \cdot 5H_2O$; m.w. 328.28; wh. deliq. powd.; s.w.

potassium muriate. See potassium chloride.

potassium naphthenate. Gray paste used in driers and as an emulsifying agent.

potassium nitrate (saltpeter). KNO_3; m.w. 101.11; rhomb. or trig. col.; s.g. 2.109 [16]; m.p. 334; b.p. d. 400; s.w.; i.al.

potassium nitride. K_3N; m.w. 131.31; grnsh. blk.

potassium nitrite. KNO_2; m.w. 85.11; col. prism, deliq.; s.g. 1.915; m.p. 297; b.p. d. 350; s.w.; i.al.

potassium nitroprusside. $K_2Fe(CN)_5NO \cdot 2H_2O$; m.w. 330.12; monocl. red.; s.w.; s.al.

potassium oleate. $KC_{18}H_{33}O_2$; m.w. 320.36; cr. or yelsh. or brnsh. soft mass; s.w.; s.al.

potassium osmate. $K_2OsO_4 \cdot 2H_2O$; m.w. 369.03, cub. vlt., hyg.; m.p. $-H_2O$, >100; s.w.; i.al.

potassium osmocyanide. $K_4Os(CN)_6 \cdot 3H_2O$; m.w. 557.29; monocl. col.; s.w.; i.al.

potassium oxalate. $K_2C_2O_4 \cdot H_2O$; m.w. 184.22; monocl. wh.; s.g. 2.08; s.w.

potassium oxalate, acid. KHC_2O_4; m.w. 128.11; monocl. col.; s.g. 2.0; s.w.; s.al.

potassium oxalate, acid. $KHC_2O_4 \cdot \frac{1}{2}H_2O$; m.w. 137.12; trim.; s.w.

potassium oxalate, acid. $KHC_2O_4 \cdot H_2O$; m.w. 146.12; rhomb.; s.g. 2.044.

potassium oxalate, bin-. See potassium oxalate, acid.

potassium oxalate, tetra-. $KH_3(C_2O_4)_2 \cdot 2H_2O$; m.w. 254.15; tricl. col.; s.g. 1.836; s.w.

potassium oxide. K_2O; m.w. 94.20; cub. col.-gray; s.g. 2.32[0]; s.w.; s.al.

potassium oxide, per-. K_2O_4; m.w. 142.20; yel. leaf; m.p. *ca.* 400; s.w. d.

potassium o-phenolsulfonate. $C_6H_5O_4SK \cdot 2H_2O$; m.w. 248.23; rhomb.; s.g. 1.734.

potassium p-phenolsulfonate. $C_6H_5O_4SK$; m.w. 212.20; rhomb.; s.g. 1.87; m.p. >260.

potassium phosphate. See potassium phosphate, ortho-.

potassium phosphate, glycero-. See potassium glycerophosphate.

potassium phosphate, meta-. $K_4(PO_3)_4 \cdot 2H_2O$; m.w. 508.51; amor. col.; s.g. 2.26 [16]; m.p. $-2H_2O$, 100; s.w.; s.al.

potassium phosphate, ortho-. K_3PO_4; m.w. 212.32; rhomb. col., deliq.; m.p. 1340; s.w.; i.al.

potassium phosphate, ortho-, monohydrogen. K_2HPO_4; m.w. 174.23; amor. wh., deliq.; s.w.; s.al.

potassium phosphate, ortho-, dihydrogen. KH_2PO_4; m.w. 136.14; tetr. col., deliq.; s.g. 2.338; m.p. 96; s.w.; i.al.

potassium phosphate, pyro-. $K_4P_2O_7 \cdot 3H_2O$; m.w. 384.19; col. deliq.; s.g. 2.33; m.p. $-2H_2O$, 180; b.p. $-3H_2O$, 300; s.w.; i.al.

potassium phosphate, pyro-, tetra-. A compound, soluble in water, which prevents the formation of insoluble "hard water" soaps, is incorporated in textile oils and soaps used to degum silk and boil off rayon, and is used for clarifying liquid soap.

potassium phosphite, hypo-. KH_2PO_2; m.w. 104.14; hex. wh., deliq.; s.w.; s.al.

potassium phosphite, ortho-, monohydrogen. K_2HPO_3; m.w. 158.23; wh. powd., deliq.; s.w.; i.al.

potassium phosphite, ortho-, dihydrogen. KH_2PO_3; m.w. 120.14; deliq. wh.; s.w.; i.al.

potassium phthalate, acid. $C_6H_4(COOH)(COOK)$; m.w. 204.14; rhomb. col.; s.g. 1.636; s.w.

potassium picrate. $KC_6H_2O_7N_3$; m.w. 267.14; rhomb.; s.g. 1.852; s.w.

potassium piperate. $KC_{12}H_9O_4$; m.w. 256.17; lt.-yel. cr. powd.; s.w.

potassium platinate. $K_2PtO_3 \cdot 3H_2O$; m.w. 375.48; rhomb. yel.; s.w.; i.al.

potassium platinocyanide. $K_2Pt(CN)_4 \cdot 3H_2O$; m.w. 431.51; rhomb. col. yel., bl. fluores., deliq.; s.g. 2.455 [16]; m.p. d. 400-600; s.w.; s.al.

potassium platinonitrite. $K_2Pt(NO_2)_4$; m.w. 457.46; monocl. col.; s.w.

potassium plumbate. $K_2PbO_3 \cdot 3H_2O$; m.w. 387.47; rhomb. col.; s.w.

potassium propionate. $KC_3H_5O_2 \cdot H_2O$; m.w. 130.15; wh. hyg. cr.; s.w.

potassium propyl sulfate. $KC_3H_7SO_4$; m.w. 178.21; wh. cr. powd.; s.w.

potassium prussiate, red. See potassium ferricyanide.

potassium prussiate, yellow. See potassium ferrocyanide.

potassium ricinoleate. $C_{17}H_{32}COOK$; m.w. 319.36; wh. paste; used as an emulsifying agent.

potassium ruthenate. $K_2RuO_4 \cdot H_2O$; m.w. 261.92; tetr. blk.; m.p. $-H_2O$, 200; b.p. d. 400 vac.; s.w.

potassium ruthenite, aquopentachloro-. $K_2Ru(H_2O)Cl_5$; m.w. 375.20; rose prisms; m.p. $-H_2O$, 200; s.w.; s.al.

potassium ruthenate, hexachloro-. K_2RuCl_6; m.w. 392.64; cub. blk.; s.w. d.; i.al.

potassium ruthenate, hydroxypentachloro-. $K_2RuOHCl_5$; m.w. 374.19; brn. cr.; s.w. d.; i.al.

potassium ruthenate, nitrosopentachloro-. $K_2RuNOCl_5$; m.w. 387.19; rhomb. dk. red.; s.w.; i.al.

potassium ruthenate, per-. $KRuO_4$; m.w. 204.80; tetr. blk.; m.p. d. 440; s.w.

potassium salicylate. $C_6H_4(OH)COOK$; m.w. 176.14; wh. powd.; s.w.; s.al.

potassium salicylate, acetyl-. See potassium acetyl salicylate.

potassium santoninate. $KC_{15}H_{19}O_4$; m.w. 302.25; wh. deliq. cr. powd.; s.w.; s.al.

potassium selenate. K_2SeO_4; m.w. 221.40; rhomb. col.; s.g. 3.066; s.w.

potassium selenocyanide. KSeCN; m.w. 144.31; need., deliq.; m.p. d. 100; s.w.; s.al.

potassium silicate. K_2SiO_3; m.w. 154.26; amor. col.; m.p. 976; s.w.; i.al.

potassium silicate, tetra-. $K_2Si_4O_9 \cdot H_2O$; m.w. 352.46; rhomb.; s.g. 2.417; m.p. d. 400; s.w.; i.al.

potassium silicododecatungstate. $K_4(SiW_{12}O_{40}) \cdot 18H_2O$; m.w. 3356.74; col. hex.; m.p. $-17H_2O$, 100; s.w.; s.al.

potassium sodium antimonyl tartrate. $KNaC_4H_2O_6(SbO)$; m.w. 346.88; wh. scales or powd.; s.w.

potassium sodium carbonate. $KNaCO_3 \cdot 6H_2O$; m.w. 230.19; monocl.; s.g. 1.61; m.p. $-6H_2O$, 100; s.w.

potassium sodium cobaltinitrite. $K_2NaCo(NO_2)_6 \cdot H_2O$; m.w. 454.20; yel. cr.; s.g. 1.633; m.p. 135; s.w.; i.al.

potassium sodium tartrate. $KNaC_4H_4O_6 \cdot 3H_2O$; m.w. 264.18; monocl. col.; s.g. 1.783.

potassium sodium tartrate (Rochelle salt). $KNaC_4H_4O_6 \cdot 4H_2O$; m.w. 282.19; rhomb. col.; s.g. 1.790; m.p. 70-80; b.p. $-4H_2O$, 215; s.w.; s.al.

potassium stannate. $K_2SnO_3 \cdot 3H_2O$; m.w. 298.95; trig. col.; s.g. 3.197; s.w.; i.al.

potassium stannosulfate. $K_2Sn(SO_4)_2$; m.w. 389.02; wh. cr.

potassium stearate. $KC_{18}H_{35}O_2$; m.w. 322.37; wh. cr. powd.

potassium strontium chromium oxalate. $KSrCr(C_2O_4)_3 \cdot 6H_2O$; m.w. 550.83; s.g. 2.155 [12].

potassium succinate. $K_2C_4H_4O_4 \cdot 3H_2O$; m.w. 248.28; rhomb.; s.g. 1.564.

potassium succinate, acid. $KC_4H_5O_4$; m.w. 156.14; monocl.; s.g. 1.767; m.p. 242 d.

potassium succinate, acid. $KC_4H_5O_4 \cdot 2H_2O$; m.w. 192.17; rhomb.; s.g. 1.616.

potassium succinate, di-. See potassium disuccinate.

potassium sulfate (arcanite). K_2SO_4; m.w. 174.26; rhomb. or hex. col.; s.g. 2.662; m.p. tr. 588; 1076; s.w.; i.al.

potassium sulfate, acid (misenite). $KHSO_4$; m.w. 136.17; monocl. or rhomb. col., deliq.; s.g. 2.24-2.61; m.p. 210; s.w.; i.al.

potassium sulfate, bi-. See potassium sulfate, acid.

potassium sulfate, ethyl-. See potassium ethyl sulfate.

potassium sulfate, methyl-. See potassium methyl sulfate.

potassium sulfate, per-. $K_2S_2O_8$; m.w. 270.32; tricl. col.; m.p. d. <100; s.w.; i.al.

potassium sulfate, propyl. See potassium propyl sulfate.

potassium sulfate, pyro-. $K_2S_2O_7$; m.w. 254.32; col. need.; s.g. 2.27; m.p. >300; s.w.

potassium sulfide, di-. K_2S_2; m.w. 142.32; red. yel. cr.; s.w.; s.al.

potassium sulfide, mono-. K_2S; m.w. 110.26; yel.-br. deliq.; s.g. 1.805; m.p. 471; s.w.; s.al.

potassium sulfide, mono-. $K_2S \cdot 5H_2O$; m.w. 200.34; rhomb.; m.p. 60; b.p. $-3H_2O$, 150; s.w.; s.al.

potassium sulfide, penta-. K_2S_5; m.w. 238.50; orange cryst.; m.p. 206; s.w.; s.al.

potassium sulfide, tetra-. K_2S_4; m.w. 206.44; red-br. cr.; m.p. 145; b.p. d. 850; s.w.; s.al.

potassium sulfide, tri-. K_2S_3; m.w. 174.38; br. yel. cr.; m.p. 252; s.w.; s.al.

potassium sulfite. $K_2SO_3 \cdot 2H_2O$; m.w. 194.29; monocl. wh.-yelsh.; s.w.; s.al.

potassium sulfite, acid. $KHSO_3$; m.w. 120.17; col. cr.; m.p. d. 190; s.w.; i.al.

potassium sulfite, bi-. See potassium sulfite, acid.

potassium sulfite, metabi-. See potassium sulfite, pyro-.

potassium sulfite, pyro- (metabisulfite). $K_2S_2O_5$; m.w. 222.32; monocl. pl.; s.w.; s.al.

potassium sulfocyanide. See potassium thiocyanate.

potassium d-tartrate. $K_2C_4H_4O_6 \cdot \frac{1}{2}H_2O$; m.w. 235.24; monocl. col.; s.g. 1.97; s.w.; s.al.

potassium dl-tartrate. $K_2C_4H_4O_6$; m.w. 226.23; monocl. col.; s.g. 1.984.

potassium d-tartrate, acid. $KHC_4H_4O_6$; m.w. 188.14; rhomb. col.; s.g. 1.956; s.w.; i.al.

potassium dl-tartrate, acid. $KHC_4H_4O_6$; m.w. 188.14; monocl. col.; s.g. 1.954.

potassium tartrate, bi-. See potassium tartrate, acid.

potassium tellurate. $K_2TeO_4 \cdot 5H_2O$; m.w. 359.78; rhomb. col. deliq.; s.w.; i.al.

potassium tellurite. K_2TeO_3; m.w. 253.70; wh. deliq. cr.; s.w.

potassium thioantimonate. $2K_3SbS_4 \cdot 9H_2O$; m.w. 896.74; yel. cr.; s.w.; i.al.

potassium thioarsenate. K_3AsS_4; m.w. 320.47; deliq. cr.; s.w.; i.al.

potassium thioarsenite. K_3AsS_3; m.w. 288.41; s.w.; i.al.

potassium thiocarbonate. K_2CS_3; m.w. 186.38; red, br. cr., deliq.; s.w.; s.al.

potassium thiocyanate. KCNS; m.w. 97.17; col. prisms, deliq.; s.g. 1.886; m.p. 173.2; b.p. d. 500; s.w.; s.al.

potassium thionate, penta-. $2K_2S_3O_6 \cdot 3H_2O$; m.w. 723.05; rhomb.; s.g. 2.112; s.w.; i.al.

potassium thionate, tetra-. $K_2S_4O_6$; m.w. 302.44; monocl.; s.g. 2.296; s.w.; i.al.

potassium thionate, tri-. $K_2S_3O_6$; m.w. 270.38; rhomb.; s.g. 2.304; s.w.; i.al.

potassium thioplatinate. $K_2Pt_4S_6$; m.w. 1051.48; bl. gray cr.; s.g. 6.44 [15]; i.w.

potassium thiostannate. $K_2SnS_3 \cdot 3H_2O$; m.w. 347.13; dk. br. oil; s.g. 1.847 [18]; m.p. $-3H_2O$, 100; s.w.; i.al.

potassium thiosulfate. $3K_2S_2O_3 \cdot H_2O$; m.w. 588.98; monocl. deliq.; s.g. 2.23, (anh.) 2.590; m.p. $-H_2O$, 180; s.w.; i.al.

potassium thiosulfate. $3K_2S_2O_3 \cdot 5H_2O$; m.w. 661.04; col. rhomb.; s.w.

potassium titanium oxalate. See titanium potassium oxalate.

potassium tungstate, meta-. $K_2W_4O_{13} \cdot 8H_2O$; m.w. 1166.32; cubic; s.w.

potassium tungstate, ortho-. $K_2WO_4 \cdot 2H_2O$; m.w. 362.23; monocl. col., deliq.; s.g. 3.113; m.p. tr. 388, 921; s.w.; i.al.

potassium tungstate, para-. $K_6W_7O_{24} \cdot 6H_2O$; m.w. 2014.69; rhomb.; s.w.; i.al.

potassium undecylenate. $C_{10}H_{21}COOK$; m.w. 224.3; gr. paste; used as an emulsifying agent and as a detergent.

potassium uranate. K_2UO_4; m.w. 380.34; or.-yel., rhomb.; i.w.

potassium uranate, per-. $K_2UO_5 \cdot 3H_2O$; m.w. 450.39; orange-yel.; m.p. d. 100.

potassium uranium oxalate. $K_4U(C_2O_4)_4 \cdot 5H_2O$; m.w. 836.62; monocl.; s.g. 2.563.

potassium uranium oxoacetate. $KUO_2(C_2H_3O_2)_3HOH$; m.w. 504.33; tetr.; s.g. 2.396.

potassium urate, acid. $KHC_5H_2N_4O_3$; m.w. 206.16; wh. powd.; s.w.

potassium uroxanate, acid. $KC_6H_7N_4O_6$; m.w. 253.15.

potassium vanadate, meta-. KVO_3; m.w. 138.05; col. cr.; s.w.; i.al.

potassium xanthate. See potassium xanthogenate.

potassium xanthogenate. $KS_2COC_2H_5$; m.w. 160.26; col.-lt. yel. pr.; s.g. 1.558 [21.5]; m.p. d. >200; s.w.; s.al.; mineral ore flotation agent.

potcher. Bleaching tank used in paper manufacture.

potential (electric). Electrical energy level, measured at any point by the work necessary to bring unit positive charge from an infinite distance to the point.

potential energy. Energy due to the position of one body with respect to another or to the relative parts of the same body.

potential function. Variable in expression for any physical potential.

potential, glow. See glow potential.

potential gradient. Voltage drop per unit length between two points on a single conductor or in the earth; expressed in volts per 1000 feet.

potential hole. See potential well.

potential, intrinsic. See intrinsic potential.

potential, ionic. See ionic potential.

potential, ionization. See ionization potential.

potential mediator. A substance that undergoes a reversible oxidation-reduction and quickly attains equilibrium, e.g. ceric compounds.

potential, migration. See migration potential.

potential, Nernst. See Nernst potential.

potential, oxidation. See oxidation potential.

potential, streaming. See streaming potential.

potential, thermodynamic. See thermodynamic potential.

potential well (potential hole). Space toward which electric potential drops suddenly and in which its value is less than on either side.

potentiometer. Instrument for comparing voltages with a constant standard of e.m.f., thus evaluating them.

potentiometric analysis. Analysis depending upon the rapid potentiometric change at the end-point of an electrode immersed in the titrated solution.

pot-hole. A smooth pot-shaped hole worn out over a long period of time in the bed rock of a river due to the whirling of silt and rocks in a continuous eddy at the same spot.

poundal-foot. A measure of torque or moment of force, equal to 4.2140×10^5 dyne centimeters.

pour point. Lowest temperature at which an oil will pour or flow when chilled.

Poutet's reagent. Reagent used in oil analysis; 1 cc. mercury in 12 cc. nitric acid.

powder pattern (Hull ring; Debye ring; Debye-Scherrer ring). Pattern of parallel lines or bands of ferromagnetic powder formed on surface of magnetized crystal.

powdering (chalking). Formation of a powder, which can be rubbed off by fingers, on a paint coating.

powellite. A mineral, $CaO \cdot MoO_3$; tetr., yel., grn., or blsh.; sp.gr. 4.356-4.526; hardness 3.5.

power. Product of two or more equal factors, thus 8 is the third power of two, or $2 \times 2 \times 2$ and is expressed as 2^3; a time-rate of doing work.

power factor. Ratio of true power (watts) to apparent power (volts × amperes).

power, radiant. See radiant power.

power ratios. In telephone engineering, a relationship of power and sound.

Poynting theorem. Rate of energy transfer is proportional to vector product of the electric and magnetic intensities.

pozzolana. Material capable of reacting with lime, in presence of water, to produce cements.

pozzolanic. Volcanic ash.

prase. Dull green, translucent variety of quartz.

praseodymium. Pr; at. wt. 140.92; pa. yel. met.; s.g. 6.5; m.p. 940; a metallic element belonging to the group of rare earths.

praseodymium acetate. $Pr(C_2H_3O_2)_3 \cdot 3H_2O$; m.w. 372.04; grn. need.; s.w.

praseodymium acetylacetonate. $Pr(CH_3COCHCOCH_3)_3$; m.w. 438.08; cr. ppt.; m.p. 146.

praseodymium ammonium sulfate. $Pr_2(SO_4)_3 \cdot (NH_4)_2SO_4 \cdot 8H_2O$; m.w. 846.28; cryst.; s.g. 2.531 [18.5]; m.p. $-8H_2O$, 170; s.w.

praseodymium bromate. $Pr(BrO_3)_3 \cdot 9H_2O$; m.w. 686.81; hex. grn.; m.p. 56.5; b.p. $-7H_2O$, 100; s.w.

praseodymium bromide. $PrBr_3$; m.w. 380.67; grn. cr. powd.; s.w. d.

praseodymium carbide. PrC_2; m.w. 164.92; yel. cr.; s.g. 5.10.

praseodymium carbonate. $Pr_2(CO_3)_3 \cdot 8H_2O$; m.w. 605.96; grn. silky. pl.; m.p. $-6H_2O$, 100; i.w.

praseodymium chloride. $PrCl_3$; m.w. 247.29; bl. grn. need.; s.g. 4.02 [25]; m.p. 818 (769-82); b.p. >1000; s.w.; s.al.

praseodymium chloride. $PrCl_3 \cdot 7H_2O$; m.w. 373.40; tricl. grn.; s.g. 2.25 [17]; m.p. 115; s.w.; s.al.

praseodymium hexaantipyrine perchlorate. $[Pr(COC_{11}H_{12}N_2)_4(ClO_4)_3]$; m.w. 2215.95; grn. hex. leaf.; m.p. 286-91 d.

praseodymium oxalate. $Pr_2(C_2O_4)_3 \cdot 10H_2O$; m.w. 726.00; lt. grn. cr.; s.w.

praseodymium oxide, di-. PrO_2; m.w. 172.92; br.-bl. powd.

praseodymium oxide, per-. Pr_2O_5; m.w. 361.84.

praseodymium oxide, tetr-. PrO_4; m.w. 204.92; blk.; s.g. 5.978.

praseodymium oxide, tri-. Pr_2O_3; m.w. 329.84; yel.-grn. amor.; s.g. 6.88; i.w.

praseodymium potassium sulfate. $Pr_2(SO_4)_3 \cdot 3K_2SO_4 \cdot H_2O$; m.w. 1110.82; cryst.; s.g. 3.275 [16]; s.w.

praseodymium rubidium nitrate. $Pr(NO_3)_3 \cdot 2RbNO_3 \cdot 4H_2O$; m.w. 693.90; grnsh. need. hyg.; m.p. 63.5.

praseodymium sulfate. $Pr_2(SO_4)_3$; m.w. 570.02; lt. grn. powd.; s.g. 3.72 [16]; s.w.

praseodymium sulfate. $Pr_2(SO_4)_3 \cdot 5H_2O$; m.w. 660.10; monocl. pr.; s.g. 3.176 [16]; s.w.

praseodymium sulfate. $Pr_2(SO_4)_3 \cdot 8H_2O$; m.w. 714.14; monocl. grn.; s.g. 2.827 [13.3]; s.w.

praseodymium sulfide. Pr_2S_3; m.w. 378.02; br. powd.; s.g. 5.042 [11]; i.w.

precession. Motion of axis of a symmetrical rotating body which slowly generates a cone with the centroid as vertex, e.g. gyroscope motion.

precious metals. The metals gold, silver, platinum, etc.

precipitate. Insoluble finely divided material formed when two or more solutions are mixed.

precipitated sulfur. See sulfur, lac.

precipitation number. Number of cc. of precipitate formed when 10 cc. of a lubricating oil are mixed with 90 cc. naphtha of a certain boiling range and then centrifuged.

precipitin. The substance in the immune blood serum that provokes precipitation when another substance is injected into that serum.

precipitin reaction. Precipitation reaction between antigens and their homologous anti-bodies.

predissociation. Very active state, chemically, of a molecule, in which absorption bands are diffuse.

Preece test. Test for uniformity of galvanizing coating by means of solution of copper sulfate.

preform. Molding powder converted by pressure and without heat into a denser coherent form which approximates the shape of the final hot-pressed article.

prehnite (zeolite). A mineral, $2CaO \cdot Al_2O_3 \cdot 2SiO_2 \cdot H_2O$; rhomb., lt. grn., wh. or gray; sp.gr. 2.80-2.95; hardness 6.0-6.5.

prehnitene (1, 2, 3, 4-tetramethylbenzene; prehnitole). $(CH_3)_4C_6H_2$; m.w. 134.11; col.; m.p. −4; b.p. 204; i.w.; s.al.

prehnitic acid (1, 2, 3, 5-benzenetetracarboxylic acid). $C_6H_2(COOH)_4$; m.w. 254.05; pr. $(+2H_2O)$ f.w.; s.w.

prehnitylic acid (2, 3, 4-trimethylbenzoic acid). $(CH_3)_3C_6H_2COOH$; m.w. 164.09; pr.f.al.; m.p. 167.5; s.w.; s.al.

preservative. Material which prevents bacterial or mold growth, fermentation or decomposition, e.g. sodium benzoate.

pressure. Force applied to, or distributed, over a surface; measured as force per unit area.

pressure efficiency. See manometric efficiency.

pressure, intrinsic. External pressure plus cohesion force of a liquid.

pressure modulus. See bulk modulus.

pressure shift. Effect of high pressure on wave length of spectral lines.

pressure, water vapor. See water vapor pressure.

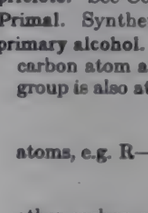
Prestolite. A solution of acetylene, under pressure, in acetone, used as a convenient means of keeping acetylene to be used for illumination.

Prestone. Ethylene glycol, antifreeze mixture.

priciete. See Colemanite.

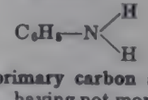
Primal. Synthetic acryloid resin.

primary alcohol. An alcohol wherein the carbon atom attached to the hydroxyl group is also attached to two hydrogen



atoms, e.g. R—C(H)(H)—OH, rather than to other carbon atoms.

primary amine. An amine in which only one of bonds of the amino nitrogen is attached to a carbon atom, e.g.



primary carbon atom. A carbon atom having not more than one other carbon directly attached to it.

primary dark space. See Aston dark space.

primary phosphate. Salt of orthophosphoric acid in which one hydrogen atom is replaced by a metal, e.g. NaH_2PO_4.

primary salinity. See salinity, primary.

prime number. Numbers having no common factor but 1; numbers which cannot be even divided by any number except 1 and the number itself, e.g. 17.

priming. Preparatory or first coating of paint.

primuline. Yellow thiazole dye.

principal focus. The point on the optical axis of a lens or mirror at which a beam of light parallel to the axis will be focussed.

principal plane. Plane formed by direction of ray and axial direction of a doubly refracting crystal.

printing ink. See ink, printing.

prismatoid. Solid, two of whose faces (the bases) are polygons in parallel planes.

prismoid. Resembling a prism.

procaine, hydrochloride (β-diethylaminoethyl p-aminobenzoate hydrochloride; novocain; ethocain). $NH_2C_6H_4COOC_2H_4N(C_2H_5)_2 \cdot HCl$; m.w. 272.64; col. need. f.al.; m.p. 156; s.al.

process industries. Industries which transform chemical raw materials into commercial products by heating,

mixing, etc., e.g. the rubber industry.

process of first order. Change in which the rate of change of one variable, as compared with another variable is proportional to the first power of the one variable alone.

prochlorite. See clinochlore.

producer gas. A gas containing nitrogen (60), carbon monoxide (30), hydrogen (10), and hydrocarbons, made by passing air and steam thru red-hot coke.

production coefficient. Rate at which primary radiation causes secondary radiations with respect to thickness of medium traversed.

proenzyme. See zymogen.

proferment. A substance from which an enzyme is formed, or a substance which is necessary for the action of an enzyme.

profilograph. Instrument for obtaining magnified profile curves of surfaces.

profilometer. Instrument for measuring roughness of a surface.

progression, arithmetical. A series of numbers or terms in which there is a constant arithmetical difference between successive members.

progression, geometrical. A series of numbers or terms in which each member is equal to the preceding member multiplied by a constant factor.

projected diameter, mean. Diameter of circle having an area equal to that of the projected image of the particle placed in the most stable position.

projection formula. A simplified representation of the stereochemical arrangements, obtained by projecting the position of the atoms of a compound, differently arranged in space, onto the plane of the paper.

projection, isometric. See isometric projection.

projection welding. See spot welding.

prolamin. See gliadin.

Prolaurin. Propylene glycol monolaurate.

Prolein. Propylene glycol mono-oleate.

proliferation. Multiplication of cells.

d-proline (d-2-pyrrolidinecarboxylic acid). C_4H_8NCOOH; m.w. 115.08; pr.

dl-proline (dl-2-pyrrolidinecarboxylic acid). $C_4H_8N \cdot COOH$; m.w. 115.08; s.w.; s.al.

l-proline (l-2-pyrrolidinecarboxylic acid). $C_4H_8N \cdot COOH$; m.w. 115.08; flat need. f.al., pr.f.w.; s.w.

proline, hydroxy-(d) (4-hydroxy-2-pyrrolidinecarboxylic acid). $C_4H_7N(OH)$-$COOH$; m.w. 131.08; m.p. 274.

proline, hydroxy-(l). $C_4H_7N(OH)$-$COOH$; m.w. 131.08; rhomb. pl. or fine need.; m.p. 274; s.w.; s.al.

prometacenter. Center of curvature of a buoyancy curve at any point.

promoter. Substance which increases activity of a catalyst disproportionately to amount added.

proof spirit. A standard concentration of alcohol-water mixture in terms of which alcoholic concentrations may be expressed, i.e., a mixture which at 51° F. is $^{12}/_{13}$ as dense as water, or sp.gr. 0.9198 at 60° F., containing 57.1% of alcohol by volume or 49.28% by weight and which is considered as 100 proof.

proof stress. Arbitrary stress which, when applied for a given time, will produce not more than a specified permanent set.

Proofit. See aquatec.

prooxidant. Substance which hastens oxidation or rancidification.

propadiene (allene, dimethylenemethane). $CH_2{:}C{:}CH_2$; m.w. 40.03; gas; m.p. −146; b.p. −32.

propadiene, dioxo-. See carbon suboxide.

propadiene, tetraphenyl- (tetraphenylallene). $(C_6H_5)_2C{:}C{:}C(C_6H_5)_2$; m.w. 344.16; need. or pr. f.dil.al. or acet.; m.p. 166; i.w.; s.al.

propanal. See propionaldehyde.

propanal, 2, 2-dimethyl-. See pivalaldehyde.

propanal, 2-methyl-. See isobutyraldehyde.

propanal, 2-oxo-, 1-oxime. See pyruvaldehyde, aldoxime.

propanal, 3-phenyl-. See hydrocinnamaldehyde.

propanamide. See propionamide.

propanamide, 2-hydroxy-. See lactamide.

propanamide, 2-methyl-. See isobutyramide.

propane (dimethylmethane). CH_3CH_2-CH_3; m.w. 44.06; col. gas; m.p. −189.9; b.p. −44.5; s.al.

propane, 1-amino-2, 2-dimethyl-. See propylamine, β, β-dimethyl-.

propane, 1-amino-2-methyl-. See isobutylamine.

propane, 2, 2-bis (ethylsulfonyl)- (acetone diethylsulfone; sulfonmethane; sulfonal). $(CH_3)_2S(SO_2C_2H_5)_2$; m.w. 228.24; col. monocl. pr.f.al.; m.p. 128; s.al.

propane, 1-bromo-. See propyl bromide.

propane, 2-bromo-. See isopropyl bromide.

propane, 1-bromo-2-chloro-. CH_3CHCl-CH_2Br; m.w. 157.42; liq.; b.p. 118.0.

propane, 2-bromo-1-chloro-. CH_3-$CHBrCH_2Cl$; m.w. 157.42; liq.; b.p. 117.0 [750].

propane, 1-bromo-2, 2-dimethyl- (tert-butylmethyl bromide). $(CH_3)_3$-CCH_2Br; m.w. 151.00; col. liq.; b.p. 89-91 [740]; i.w.; s.al.

propane, 1-bromo-2-methyl-. See isobutyl bromide.

propane, 2-bromo-2-methyl-. See tert-butyl bromide.

propane, 1-chloro-. See propyl chloride.

propane, 1-chloro-2-(β-chloroisopropoxy)-. See ether, bis-β-chloroisopropyl.

propane, 1-chloro-2, 2-dimethyl-. $(CH_3)_3CCH_2Cl$; m.w. 106.54; b.p. 84.4.

propane, 1-chloro-2, 3-epoxy-. See epichlorohydrin.

propane, 1-chloro-2-methyl-. See isobutyl chloride.

propane, 2-chloro-. See isopropyl chloride.

propane, 2-chloro-2-methyl-. See tert-butyl chloride.

propanediamide. See malonamide.

dl-1, 2-propanediamine (dl-propylenediamine). $CH_3CH(NH_2)CH_2NH_2$; m.w. 74.09; col. liq.; b.p. 119.

1, 3-propanediamine (trimethylenediamine). $NH_2(CH_2)_3NH_2$; m.w. 74.09; col. liq.; b.p. 135.5; s.w.; s.al.

propane, 1, 1-dibromo- (propylidene bromide). $CH_3CH_2CHBr_2$; m.w. 201.88; liq.; b.p. ca. 130.

propane, 1, 2-dibromo- (propylene bromide; propylene dibromide). $CH_2BrCHBrCH_3$; m.w. 201.88; col. liq.; m.p. −55.5; b.p. 141.6; s.al.

propane, 1, 3-dibromo- (trimethylene bromide; trimethylene dibromide). $BrCH_2CH_2CH_2Br$; m.w. 201.88; col. liq.; m.p. −34.4; b.p. 167; s.al.

propane, 2, 2-dibromo- (bromoacetol). $CH_3CBr_2CH_3$; m.w. 201.88; b.p. 114-5 [760].

propane, 1, 1-dibromo-2-methyl- (isobutylidene bromide). $(CH_3)_2CH$-$CHBr_2$; m.w. 215.89; liq.; m.p. −70.3; b.p. 149.0.

propane, 1, 1-dichloro- (propylidene chloride). $CH_3CH_2CHCl_2$; m.w. 112.96; liq.; b.p. 87.

propane, 1, 2-dichloro- (propylene chloride; propylene dichloride). CH_2-$ClCHClCH_3$; m.w. 112.96; col. liq.; b.p. 96.8; s.al.

propane, 1, 3-dichloro- (trimethylene chloride; trimethylene dichloride). $ClCH_2CH_2CH_2Cl$; m.w. 112.96; col. liq.; b.p. 120.4; s.al.

propane, 2, 2-dichloro- (isopropylidene chloride; acetone dichloride; chloroacetol; dichlorodimethylmethane). $CH_3CCl_2CH_3$; m.w. 112.96; liq.; m.p. −34.6; b.p. 69-70; i.w.; s.al.

propane, 1, 2-diiodo- (propylene diiodide; propylene iodide). CH_3CHI-CH_2I; m.w. 295.89; liq.

propane, 2, 2-dimethyl- (tetramethylmethane; neopentane). $(CH_3)_4C$; m.w. 74.09; gas; m.p. −20; b.p. 9.5; i.w.; s.al.

propanedinitrile. See malononitrile.

propanedioic acid. See malonic acid.

propanedioic acid, 2-propenyl-. See malonic acid, allyl-.

1, 2-propanediol (propylene glycol). $CH_3OHCHOHCH_2$; m.w. 76.06; col. liq.; b.p. 189; s.w.; s.al.

1, 3-propanediol (trimethylene glycol). $HOCH_2CH_2CH_2OH$; m.w. 76.06; visc. liq.; s.w.; s.al.

1, 3-propanediol, 2, 3-bishydroxymethyl-. See pentaerithritol.

1, 2-propanediol, 3-chloro- (α-chlorohydrin; glycerol α-chlorohydrin). $CH_2ClCHOHCH_2OH$; m.w. 110.51; ylsh. liq.; s.w.; s.al.

1, 3-propanediol, 2, 2-dimethyl- (dimethyltrimethylene glycol). $(CH_3)_2$-$C(CH_2OH)_2$; m.w. 104.09; need. f. bz.; m.p. 127; b.p. 203 [730]; i.w.; s.al.

1, 3-propanediol, 2-hydroxymethyl-2-methyl- (pentaglycerol; pentaglycerin). $CH_3C(CH_2OH)_3$; m.w. 120.09; need. f.al.; m.p. 199; s.w.; s.al.

1, 2-propanediol, 3-mercapto-. See glycerol, 1-thio-.

1, 2-propanediol, 2-methyl- (isobutylene glycol; as-dimethylethylene glycol). $(CH_3)_2C(OH)CH_2OH$; m.w. 90.08; liq.; b.p. 177; s.w.

1, 2-propanediol, 3-octadecyloxy- (glycerol 1-octadecyl ether). CH_3-$(CH_2)_{17}OCH_2CHOHCH_2OH$; m.w. 344.34; col. cr.; m.p. 70-1; i.w.; s.al.

1, 3-propanedione, 1, 3-diphenyl-. See methane, dibenzoyl-.

propane, 1, 3-diphenoxy- (trimethylene glycol diphenyl ether). $C_6H_5OCH_2$-$CH_2CH_2OC_6H_5$; m.w. 228.12; shiny leaf. f.al.; m.p. 61; b.p. 338-40; i.w.; s.al.

propane, 1, 2-epoxy-. See propene oxide.

propane, 1, 2-epoxy-3-iodo-. See epiiodohydrin.

propane, 1, 2-epoxy-2-methyl-. See ethylene oxide, α, α-dimethyl-.

propane, 1-ethoxy-. See ether, ethyl propyl.

propane, 2-ethoxy-. See ether, ethyl isopropyl.

propane, 1-ethoxy-2-methyl-. See ether, ethyl isobutyl.

propane, 2-ethoxy-2-methyl-. See ether, tert-butyl ethyl.

propane, 1-fluoro-. See propyl fluoride.

propane, 2-fluoro-. See isopropyl fluoride.

propane, 1-fluoro-2-methyl-. See isobutyl fluoride.

propane, 1-iodo-. See propyl iodide.

propane, 2-iodo-. See isopropyl iodide.

propane, 1-iodo-2, 2-dimethyl- (tert-butylmethyl iodide). $(CH_3)_3CCH_2I$; m.w. 198.01; col. oil.; i.w.; s.al.

propane, 1-iodo-2-methyl-. See isobutyl iodide.

propane, 2-iodo-2-methyl-. See tert-butyl iodide.

propane, 2-isopropoxy-. See isopropyl ether.

propane, 2-(isopropylthio)-. See isopropyl sulfide.

propane, 1-methoxy-. See ether, methyl propyl.

propane, 2-methoxy-. See ether, isopropyl methyl.

propane, 1-methoxy-2-methyl-. See ether, isobutyl methyl.

propane, 2-methyl-. See isobutane and tert-butyl derivatives.

propane, 1-methyl-1-(methylpropylthio)-. See sec-butyl sulfide.

propane, 2-methyl-1-(β-methylpropoxy)- See isobutyl ether.

propane, 2-methyl-1-(β-methylpropylthio)-. See isobutyl sulfide.

propane, 2-methyl-1-nitro- (nitroisobutane). $(CH_3)_2CHCH_2NO_2$; m.w. 103.08; col. liq.; b.p. 140.8; s.w.; s.al.

propane, 2-methyl-1-phenoxy-. See ether, isobutyl phenyl.

propane, 2-methyl-1-phenyl-. See benzene, isobutyl-.

propane, 2-methyl-2-phenyl-. See benzene, tert-butyl-.

propanenitrile. See propionitrile.

propanenitrile, 2-methyl-. See isobutyronitrile.

propanenitrile, 2-oxo-. See pyruvonitrile.

propanenitrile, 3-oxo-3-phenyl-. See acetonitrile, benzoyl-.

propane, 1-nitro-. $CH_3CH_2CH_2NO_2$; m.w. 89.06; col. liq.; b.p. 131.5; s.w.; s.al.

propane, 2-phenoxy-. See ether, isopropyl phenyl.

propane, 1-phenyl-. See benzene propyl-.

propane, 2-phenyl-. See cumene.

propane, 1-propoxy-. See propyl ether.

propane, 1-propylsulfonyl-. See propyl sulfone.

propane, 1-propythio-. See propylsulfide.

1-propanethiol (n-propyl mercaptan). $CH_3CH_2CH_2SH$; m.w. 76.12; liq.; m.p. −111.5; b.p. 68; s.w.; s.al.

2-propanethiol (isopropyl mercaptan). $CH_3CHSHCH_3$; m.w. 76.12; col. liq.; m.p. −130.7; b.p. 60; s.w.; s.al.

1-propanethiol, 2-methyl- (isobutyl mercaptan). $(CH_3)_2CHCH_2SH$; m.w. 90.14; liq.; m.p. < −79; b.p. 88; s.w.; s.al.

propane, 1, 2, 3-tribromo- (glycerol tribromohydrin; tribromohydrin; allyl tribromide). $CH_2BrCHBrCH_2Br$; m.w. 280.79; pr.; m.p. 16; b.p. 220; i.w.; s.al.

1, 2, 3-propanetricarboxylic acid. See tricarballylic acid.

propane, 1, 2, 3-trichloro- (glycerol trichlorohydrin; allyl trichloride; trichlorohydrin). $CH_2ClCHClCH_2Cl$; m.w. 147.41; col. liq.; m.p. −14.7; b.p. 156-8; i.w.; s.al.

1, 2, 3-propanetriol. See glycerol.

propanetrione, diphenyl- (diphenyl triketone). $C_6H_5(CO)_3C_6H_5$; m.w. 238.08; yel. need.; m.p. 68-70; i.w.; s.al.

propane, 1, 1, 1-triphenyl- (α-ethyltritan). $(C_6H_5)_3CCH_2CH_3$; m.w. 272.16; col. cr. f. me. al.; m.p. 51-1.5; i.w.; s.al.

propanoic acid. See propionic acid.

propanoic acid, amino-. See alanine.

propanoic acid, 2-amino-3-mercapto-. See cysteine.

propanoic acid, α, β-dibromo- (2, 3-dibromopropanoic acid). CH_2BrCH-$BrCOOH$; m.w. 231.86; monocl. need. or pl.; m.p. 51; s.w.; s.al.

propanoic acid, β, β-diethyl-. See valeric acid, β-ethyl-.

propanoic acid, 3, 3'-dithiobis (2-amino-). See cystine.

propanoic acid, 2-hydroxy-. See lactic acid.

propanoic acid, 2-methyl-. See isobutyric acid.

1-propanol. See propyl alcohol.

2-propanol. See isopropyl alcohol.

1-propanol, 3-bromo- (trimethylene bromohydrin). $BrCH_2CH_2CH_2OH$; m.w. 138.97; liq.; b.p. 98-112 [18]; s.w.; s.al.

1-propanol, 3-chloro- (trimethylene chlorohydrin). $ClCH_2CH_2CH_2OH$; m.w. 94.51; liq.; b.p. 160-2; s.w.; s.al.

2-propanol, 1-chloro- (propylene chlorohydrin). $CH_2ClCHOHCH_3$; m.w. 94.51; col. liq.; b.p. 127.0; s.w.; s.al.

1-propanol, 2-chloro-, acetate (β-chloropropyl acetate; 2-chloropropyl ethanoate). $CH_3COOCH_2CHClCH_3$; m.w. 136.53; col. liq.; b.p. 152-3 [760]; i.w.; s.al.

2-propanol, 1-chloro-, acetate (β-chloroisopropyl ethanoate). CH_3COO-$CH(CH_3)CH_2Cl$; m.w. 136.53; liq.; b.p. 149-50.

1-propanol, 2, 3-dibromo- (β, γ-dibromopropyl alcohol; β-dibromohydrin; allyl alcohol dibromide). $CH_2BrCHBrCH_2OH$; m.w. 217.88; col. liq.; s.w.; s.al.

1-propanol, 2, 3-dichloro- (β-dichlorohydrin; asym-glycerol dichlorohydrin; β, γ-dichloropropyl alcohol; allyl alcohol dichloride). $CH_2ClCHClCH_2OH$; m.w. 128.96; col. liq.; b.p. 183; s.w.; s.al.

2-propanol, 1, 3-dichloro- (α-dichlorohydrin; sym-glycerol dichlorohydrin; sym-dichloroisopropyl alcohol). $CH_2ClCHOHCH_2Cl$; m.w. 128.96; col. liq.; b.p. 174-5; s.w.; s.al.

2-propanol, 1, 3-dichloro-, nitrate (β, β'-dichloroisopropyl nitrate; dichloronitrohydrin). $CH_2ClCH(NO_3)CH_2Cl$; m.w. 173.96; col. liq.; b.p. 180; i.w.; s.al.

1-propanol, 2, 2-dimethyl- (tert-butylcarbinol; neopentyl alcohol). $(CH_3)_3CCH_2OH$; m.w. 88.09; col. cr.; m.p. 53; b.p. 114; s.w.; s.al.

1-propanol, 2, 2-dimethyl-1-phenyl- (tertbutylphenylcarbinol). $C_6H_5CHOHC(CH_3)_3$; m.w. 164.12; need.; m.p. 45; b.p. 114-6 [16]; i.w.; s.al.

1-propanol, 2, 3-epoxy-. See glycidol.

1-propanol, 2-methyl-. See isobutyl alcohol.

2-propanol, 2-methyl-. See tert-butyl alcohol.

1-propanol, 2-methylamino-1-phenyl-. See pseudoephedrine.

2-propanol, nitrate. See isopropyl nitrate.

2-propanol, nitrite. See isopropyl nitrite.

1-propanol, 1-phenyl- (ethylphenylcarbinol). $C_2H_5CHOHC_6H_5$; m.w. 136.09; liq.; b.p. 219; i.w.; s.al.

1-propanol, 3-phenyl- (hydrocinnamyl alcohol). $C_6H_5CH_2CH_2CH_2OH$; m.w. 136.09; liq.; m.p. < -18; b.p. 235.6; s.w.; s.al.

2-propanol, 2-phenyl- (α, α-dimethylbenzyl alcohol; dimethylphenylcarbinol). $C_6H_5(CH_3)_2COH$; m.w. 136.09; pr.; m.p. 35-7; i.w.; s.al.

2-propanol, 1, 1, 1-trichloro-2-methyl-. See chloretone.

2-propanone. See acetone.

2-propanone, 1-amino- (aminoacetone; acetonylamine). $CH_3COCH_2NH_2$; m.w. 73.06; need. f.al.; s.w.; s.al.

2-propanone, 1-bromo- (bromoacetone). $CH_2BrCOCH_3$; m.w. 136.96; pois. liq.; m.p. -54; b.p. 136.5 [735]; s.w.; s.al.

2-propanone, 1-chloro- (chloroacetone). CH_3COCH_2Cl; m.w. 92.50; col. liq.; m.p. -44.5; b.p. 119; s.w.; s.al.

2-propanone, 1, 1-dichloro- (uns-dichloroacetone; dichloromethyl methyl ketone). $CH_3COCHCl_2$; m.w. 126.95; col. liq.; b.p. 120; s.w.; s.al.

2-propanone, 1, 3-dichloro- (sym-dichloroacetone; bischloromethyl ketone). $CH_2ClCOCH_2Cl$; m.w. 126.95; pl. or need.; m.p. 45; b.p. 173.4; s.w.; s.al.

2-propanone, 1, 3-diphenyl- (dibenzyl ketone; diphenylacetone). $(C_6H_5CH_2)_2CO$; m.w. 210.11; cr.f.dil.al.; m.p. 34-5; b.p. 330.5; i.w.; s.al.

2-propanone, 1-hydroxy-. See acetol.

1-propanone, 1-phenyl-. See propiophenone.

2-propanone, 1-phenyl- (benzyl methyl ketone). $CH_3COCH_2C_6H_5$; m.w. 134.08; col. cr.; m.p. -15.4; b.p. 216.7; i.w.; s.al.

2-propanone, 1, 1, 3, 3-tetrachloro- (sym-tetrachloroacetone). $CHCl_2COCHCl_2 \cdot 2H_2O$; m.w. 231.87; tricl.; m.p. 48.

2-propanone, 1-ureido-. See urea, acetonyl-.

propanoyl. See propionyl.

propargyl acetate. See 2-propyn-1-ol, acetate.

propargyl alcohol. See 2-propyn-1-ol.

propargylaldehyde. See propiolaldehyde.

propargyl bromide. See propyne, 3-bromo-.

propargyl chloride. See propyne, 3-chloro-.

propargylic acid. See propiolic acid.

propargyl iodide. See propyne, 3-iodo-.

propenal. See acrolein.

propenal, 3-phenyl-. See cinnamaldehyde.

propene (methylethylene; propylene). $CH_2{:}CHCH_3$; m.w. 42.05; col. gas; m.p. -185.2; b.p. -47.0; s.w.; s.al.; for derivatives see also the corresponding allyl compounds.

propene, 1-bromo- (propenyl bromide). $CH_3CH{:}CHBr$; m.w. 120.96; liq.; m.p. -116.6; b.p. 60.2.

propene, 2-bromo- (isopropenyl bromide). $CH_3CBr{:}CH_2$; m.w. 120.96; liq.; m.p. -124.8; b.p. 48.4.

propene, 3-bromo-. See allyl bromide.

propene, 1-chloro- (propenyl chloride; α-chloropropylene). $CH_3CH{:}CHCl$; m.w. 76.50; liq.; b.p. 35-6.

propene, 2-chloro- (isopropenyl chloride; β-chloropropylene). $CH_3CCl{:}CH_2$; m.w. 76.50; liq.; b.p. 23 [738].

propene, 3-chloro-. See allyl chloride.

propene, 3-chloro-1-phenyl- ([γ-chloropropenyl] benzene; cinnamyl chloride). $C_6H_5CH{:}CHCH_2Cl$; m.w. 152.53; col. liq.; b.p. 213-5; i.w.; s.al.

propene, 2, 3-dibromo- (α-bromoallyl bromide; α-epidibromohydrin). $CH_2BrCBr{:}CH_2$; m.w. 199.86; liq.; b.p. 140.

propene, 1, 2-dichloro- (allylene dichloride). $CHCl{:}CClCH_3$; m.w. 110.95; liq.; b.p. 75.

propene, 2, 3-dichloro- (α-epidichlorohydrin; α-chloroallyl chloride). $CH_2{:}CClCH_2Cl$; m.w. 110.95; col. liq.; b.p. 94; i.w.; s.al.

propene, 1, 1-diphenyl-. $(C_6H_5)_2C{:}CHCH_3$; m.w. 194.11; leaf. f.al.; m.p. 51.5-52; b.p. 284.5; i.w.; s.al.

propene, 1, 2-epoxy- (allylene oxide; methyloxirene). $CH_3C{:}CH{\cdot}O$; m.w. 56.03; liq.; b.p. 63; s.w.; s.al.

propene, 3-ethoxy-. See ether, allyl ethyl.

propene, 3-fluoro-. See allyl fluoride.

propene, 3-iodo-. See allyl iodide.

propene, 3-methoxy-. See ether, allyl methyl.

propene, 3-methyl- (uns-dimethylethylene; isobutylene; γ-butylene). $CH_2{:}C(CH_3)CH_3$; m.w. 56.06; col. gas; b.p. -6; i.w.; s.al.

propenenitrile. See acrylonitrile.

propene oxide (1, 2-epoxypropane; propylene oxide; methyloxirane). OCH_2CHCH_3; m.w. 58.05; col. liq.; b.p. 35; s.w.; s.al.

propene, 1-phenyl-. See benzene, propenyl-.

propene, 2-phenyl-. See benzene, isopropenyl-.

propene, 3-(2-propenoxy)-. See allyl ether.

propene, 3-(2-propenylthio)-. See allyl sulfide.

2-propene-1-thiol (allyl mercaptan). $CH_2{:}CHCH_2SH$; m.w. 74.11; liq.; b.p. 90; i.w.; s.al.

1, 2, 3-propenetricarboxylic acid. See aconitic acid.

propenoic acid. See acrylic acid and corresponding derivatives.

2-propen-1-ol. See allyl alcohol.

2-propen-1-ol, 2-bromo- (β-bromoallyl alcohol). $CH_2{:}CBrCH_2OH$; m.w. 136.96; liq.; b.p. 153-4 [744].

2-propen-1-ol, 2-chloro- (β-chloroallyl alcohol). $CH_2{:}CClCH_2OH$; m.w. 92.50; b.p. 153.

2-propen-1-ol, 3-(4-hydroxy-3-methoxyphenyl)-. See coniferyl alcohol.

2-propen-1-ol, 3-phenyl-. See cinnamic alcohol.

2-propen-1-one, 1, 3-diphenyl-. See chalcone.

2-propenylamine. See allylamine.

propenyl bromide. See propene, 1-bromo-.

propenyl chloride. See propene, 1-chloro-.

propenyl guaethol (hydroxymethyl anethol). $OC_2H_5{\cdot}OH{\cdot}CH{:}CH{\cdot}CH_3$; m.w. 93.08; grayish-wh. cryst.; m.p. 86-88; s.al.; i.w.; an antioxidant for fats and oils.

propenyl methyl guaethol. See guaethol, methyl propenyl-.

2-propenyl sulfide. See allyl sulfide.

proper energy (characteristic energy). Energy according to relativity theory; equal to product of mass and square of electromagnetic constant.

propine. See propyne.

propiolaldehyde (propynal; propargylaldehyde). $CH{:}CCHO$; m.w. 54.02; oil; b.p. 61; s.w.

propiolic acid (propynoic acid; propargylic acid). $CH{:}CCOOH$; m.w. 70.02; col. liq.; m.p. 9; s.w.; s.al.

propiolic acid, ethyl-. See 2-pentynoic acid.

propiolic acid, ethyl ester. $CH{:}CCOOC_2H_5$; m.w. 98.05; col. liq.; b.p. 119.5; i.w.; s.al.

propiolic acid, methyl-. See tetrolic acid.

propiolic acid, o-nitrophenyl-. $NO_2C_6H_4C{:}CCOOH$; m.w. 191.05; need. f.h.w.; s.w.; s.al.

propiolic acid, p-nitrophenyl-. $NO_2C_6H_4C{:}CCOOH$; m.w. 191.05; need. f.al.; s.w.; s.al.

propiolic acid, phenyl- (phenylpropynoic acid). $C_6H_5C{:}CCOOH$; m.w. 146.05; col. trim. need. f.w.; m.p. 137; s.w.; s.al.

propiolic alcohol. See 2-propyn-1-ol.

propionaldehyde (propanal; methylacetaldehyde). CH_3CH_2CHO; m.w. 58.05; col. liq.; m.p. -81; b.p. 48.8; s.w.; s.al.

propionaldehyde, α, β-dihydroxy-. See glyceraldehyde.

propionaldehyde, oxime (propanal oxime; propionaldoxime). $CH_3CH_2CH{:}NOH$; m.w. 73.06; liq.; m.p. 21.5; b.p. 131-5.

propionaldoxime. See propionaldehyde, oxime.

propionamide (propanamide; propionic acid amide). $CH_3CH_2CONH_2$; m.w. 73.06; col. rhomb. leaf. f. chl.; m.p. 79; b.p. 213; s.w.; s.al.

propionamide, N-phenyl-. See propionanilide.

propionanilide (N-phenylpropionamide). $CH_3CH_2CONHC_6H_5$; m.w. 149.09; col. leaf. f. al.; m.p. 104; b.p. 222.2; s.al.

2-propionaphthone, 4-bromo-1-hydroxy- (4-bromo-2-propionyl-1-naphthol). $CH_3CH_2COC_{10}H_5BrOH$; m.w. 255.00; yel. need.; m.p. 98; i.w.; s.al.

2-propionaphthone, 1-hydroxy- (ethyl 1-hydroxy-2-naphthyl ketone). $CH_3CH_2COC_{10}H_6OH$; m.w. 176.09; yel.-grn. leaf.; m.p. 81; i.w.; s.al.

propione. See 3-pentanone.

propionic acid (propanoic acid; methylacetic acid). CH_3CH_2COOH; m.w. 74.05; col. liq.; m.p. -22; b.p. 141.1; s.w.; s.al.

propionic acid, amide. See propionamide.

propionic acid, α-amino-. See alanine.

propionic acid, β-amino-. See β-alanine.

propionic acid, α-amino-β-hydroxy-. See serine.

propionic acid, amyl ester (amyl propionate; pentyl propanoate). $CH_3CH_2COO(CH_2)_4CH_3$; m.w. 144.12; m.p. -73.1; b.p. 164-6; i.w.; s.al.

propionic acid, α-benzal-. See cinnamic acid, α-methyl-.

propionic acid, β-benzal-. See 3-butenoic acid, 4-phenyl-.

propionic acid, α-benzamido-. See alanine, N-benzoyl-.

propionic acid, β-benzoyl- (γ-keto-γ-phenylbutyric acid; 4-oxo-4-phenylbutanoic acid). $C_6H_5COCH_2CH_2COOH$; m.w. 178.08; leaf. f.al.; m.p. 116; s.w.; s.al.

propionic acid, α-bromo-(dl) (dl-2-bromopropanoic acid). $CH_3CHBrCOOH$; m.w. 152.96; col. pr.; m.p. 25.7; b.p. 203.5; s.w.; s.al.

propionic acid, β-bromo- (3-bromopropanoic acid). CH_2BrCH_2COOH; m.w. 152.96; col. leaf.; m.p. 62.5; s.w.; s.al.

propionic acid, α-bromo-, ethyl ester (ethyl 2-bromopropanoate). $CH_3CHBrCOOC_2H_5$; m.w. 180.99; col. liq.; i.w.; s.al.

propionic acid, butyl ester (butyl propionate; butyl propanoate). $CH_3CH_2COOC_4H_9$; m.w. 130.11; col. liq.; m.p. -89.55; b.p. 145.4; s.w.; s.al.

propionic acid, β-carbamyl-. See succinamic acid.

propionic acid, α-chloro- (2-chloropropanoic acid). $CH_3CHClCOOH$; m.w. 108.50; col. liq.; b.p. 186; s.w.; s.al.

propionic acid, β-chloro- (3-chloropropanoic acid). CH_2ClCH_2COOH; m.w. 108.50; col. leaf. f.w.; m.p. 41; b.p. 204; s.w.; s.al.

propionic acid, α-chloro-, ethyl ester (ethyl 2-chloropropanoate). $CH_3CHClCOOC_2H_5$; m.w. 136.53; col. liq.; b.p. 146; s.w.; s.al.

propionic acid, β-chloro-, ethyl ester (ethyl 3-chloropropanoate). $CH_2ClCH_2COOC_2H_5$; m.w. 136.53; col. liq.; b.p. 162-3 [765]; s.w.; s.al.

propionic acid, α-cyano- (2-cyanopropanoic acid; methyl malonic mononitrile; methylcyanoacetic acid). $CH_3CH(CN)COOH$; m.w. 99.05; oil; b.p. 142-5 [11]; s.w.; s.al.

propionic acid, α, β-dihydroxy-. See glyceric acid.

propionic acid, α, α-dimethyl-. See pivalic acid.

propionic acid, ethylene ester. See glycol, dipropionate.

propionic acid, ethyl ester. $CH_3CH_2COOC_2H_5$; m.w. 102.08; col. liq.; m.p. -73.9; b.p. 99.10; s.al.

propionic acid, furfural ester. See furfuryl alcohol propionate.

propionic acid, α-hydroxy-. See lactic acid.

propionic acid, β-hydroxy-. See hydracrylic acid.

propionic acid, α-iodo- (2-iodopropanoic acid). $CH_3CHICOOH$; m.w. 199.96; pr. or need.; m.p. 45.5; b.p. 105 [0.2]; s.w.; s.al.

propionic acid, β-iodo- (3-iodopropanoic acid). CH_2ICH_2COOH; m.w. 199.96; leaf.; m.p. 82; s.al.

propionic acid, isoamyl ester (isoamyl propionate; γ-methylbutyl propanoate). $CH_3CH_2COOC_5H_{11}$; m.w. 144.12; col. liq.; b.p. 160.2; s.al.

propionic acid, isobutyl ester (β-methylpropyl propanoate). $CH_3CH_2COOCH_2CH(CH_3)_2$; m.w. 130.11; col. liq.; m.p. -71.4; b.p. 136.8; s.w.; s.al.

propionic acid, isopropyl ester. $CH_3CH_2COOCH(CH_3)_2$; m.w. 116.09; col. liq.; b.p. 111.3; s.al.

propionic acid, α-keto-. See pyruvic acid.

propionic acid, α-methyl-. See isobutyric acid.

propionic acid, methyl ester (methyl propanoate; methyl propionate). $CH_3CH_2COOCH_3$; m.w. 88.06; col. liq.; m.p. -87.5; b.p. -79.9; s.al.

propionic acid, β-phenyl-. See hydrocinnamic acid.

propionic acid, α-phenyl-. See hydratropic acid.

propionic acid, p-phenylphenacyl ester. $CH_3CH_2COOCH_2COC_6H_4C_6H_5$; m.w. 268.12; m.p. 102.

propionic acid, piperazinium salt. $C_4H_{10}N_2 \cdot 2C_2H_5COOH$; m.w. 234.19; wh. cr.; m.p. 124-5; s.w.; s.al.

propionic acid, propyl ester (propyl propanoate; n-propyl propionate). $CH_3CH_2COOC_3H_7$; m.w. 116.09; col. liq.; m.p. -75.9; b.p. 123.4; s.al.

propionic anhydride (propanoic anhydride). $(CH_3CH_2CO)_2O$; m.w. 130.08; col. liq.; m.p. -45; b.p. 169.3.

propionitrile (propanenitrile; ethyl cyanide). CH_3CH_2CN; m.w. 55.05; col. liq.; m.p. -91.9; b.p. 97.1; s.w.; s.al.

propionitrile, α, α-dimethyl- (2, 2-dimethylpropanenitrile; tert-butyl cya-

nide; trimethylacetonitrile). $(CH_3)_3C$-CN; m.w. 83.08; cr.; m.p. 15-6; b. p. 105-6.

propionitrile, 2-hydroxy-. See lactonitrile.

propionitrile, β-hydroxy-. See hydracrylonitrile.

propionyl bromide (propanoyl bromide). CH_3CH_2COBr; m.w. 136.96; liq.; b.p. 103.5.

propionyl chloride (propanoyl chloride). CH_3CH_2COCl; m.w. 92.50; col. liq.; m.p. −94; b.p. 80; d.w.; d.al.

propionyl iodide (propanoyl iodide). CH_3CH_2COI; m.w. 183.96; liq.; b.p. 127.

propionyl, α-methyl-. See isobutyryl bromide.

propiophenone (ethyl phenyl ketone; 1-phenyl-1-propanone). C_2H_5CO-C_6H_5; m.w. 134.08; col. leaf. or liq.; m.p. 21; b.p. 218; i.w.; s.al.

propiophenone, β-acetyl-. See valerophenone, γ-keto-.

propiophenone, 2, 4-dihydroxy- (4-propionylresorcinol). CH_3CH_2CO-$C_6H_3(OH)_2$; m.w. 166.08; s.w.; s.al.

proponal. See barbituric acid, 5, 5-dipropyl-.

proportionality limit (limit of proportionality). Maximum static stress which a material is capable of developing without showing any deviation from Hooke's Law.

propyl acetate. See acetic acid, propyl ester.

propyl alcohol(N) (1-propanol; ethylcarbinol). $CH_3CH_2CH_2OH$; m.w. 60.-06; col. liq.; m.p. −127; b.p. 97.19; s.w.; s.al.

propylamine(N). $CH_3(CH_2)_2NH_2$; m.w. 59.08; col. liq.; m.p. −83; b.p. 48.7; s.w.; s.al.

propylamine(N), α, α-dimethyl-. See tert-amylamine.

propylamine(N), α, β-dimethyl- (methylisopropylcarbinylamine). $(CH_3)_2$-$CHCH(CH_3)NH_2$; m.w. 87.11; liq.; b.p. 83-4; s.w.; s.al.

propylamine, β, β-dimethyl- (tert-butylmethylamine; 1-amino-2, 2-dimethylpropane). $(CH_3)_3CCH_2NH_2$; m.w. 87.11; liq.; b.p. 82-3.

propylamine, α-ethyl- (diethylcarbinylamine; sec-n-amylamine; 3-aminopentane). $CH_3CH_2CH(C_2H_5)NH_2$; m. w. 87.11; oil; b.p. 91; s.al.

propylamine, α-methyl-. See sec-butylamine.

propylamine, β-methyl-. See isobutylamine.

propylamine, N-methyl-. $CH_3NHC_3H_7$; m.w. 73.09; col. liq.; b.p. 62-4; s.w.; s.al.

propylamine, N-nitro- (N-propylnitramine). $C_3H_7NHNO_2$; m.w. 104.08; col. liq.; m.p. −21; b.p. 128 dec; s.w.; s.al.

propyl borate (tripropyl borate; tripropoxyboron). $B(OC_3H_7)_3$; m.w. 187.98; col. liq.; sp.gr. 0.867; b.p. 175; s.al.

propyl bromide (N) (1-bromopropane). $CH_3CH_2CH_2Br$; m.w. 122.97; liq.; m.p. −110; b.p. 70.9; s.al.

propyl chloride (N) (1-chloropropane). $CH_3CH_2CH_2Cl$; m.w. 78.51; col. liq.; m.p. −122.8; b.p. 47.2; s.al.

n-propyl cyanide. See butyronitrile.

propylene. See propene.

propylene aldehyde. See crotonaldehyde.

propylene bromide. See propane, 1, 2-dibromo-.

propylene chloride. See propane, 1, 2-dichloro-.

propylene chlorohydrin. See 2-propanol, 1-chloro-.

propylenediamine. See 1, 2-propanediamine.

propylene dichloride. See propane, 1, 2-dichloro-.

propylene glycol. See 1, 2-propanediol.

propylene iodide. See propane, 1, 2-diiodo-.

propylene oxide. See propene oxide.

propylene oxide, γ-chloro-. See epichlorohydrin.

propylene oxide, γ-cyano-. See epicyanohydrin.

propylene oxide, γ-iodo-. See epiidohydrin.

propyl ether (di-n-propyl ether; 1-propoxypropane). $(CH_3CH_2CH_2)_2O$; m. w. 102.11; col. liq.; m.p. −122; b.p. 91; s.al.

propyl fluoride (N) (1-fluoropropane). $CH_3CH_2CH_2F$; m.w. 62.05; gas; b.p. −3; s.w.; s.al.

n-propyl-p-hydroxy benzoate. See benzoic acid, p-hydroxy-, n-propyl-.

propylidene bromide. See propane, 1, 1-dibromo-.

propylidene chloride. See propane, 1, 1-dichloro-.

propyl iodide (N) (1-iodopropane). CH_3-CH_2CH_2I; m.w. 169.97; col. liq.; m.p. -101.4; b.p. 102.4; s.al.

propyl isocyanide (N) (propylcarbylamine). $CH_3(CH_2)_2NC$; m.w. 69.06; liq.; b.p. 99.5; i.w.; s.al.

n-propyl mercaptan. See 1-propanethiol.

n-propyl mustard oil. See isothiocyanic acid, propyl ester.

propyl nitrate (N). $CH_3CH_2CH_2NO_3$; m.w. 105.06; liq.; b.p. 100.5; s.w.; s.al.

propyl nitrite (N). $CH_3CH_2CH_2ONO$; m.w. 89.06; liq.; b.p. 57; s.al.

propyl sulfate (di-n-propyl sulfate). $(CH_3CH_2CH_2)_2SO_4$; m.w. 182.17; col. oil; b.p. 120 ^{20}.

propyl sulfide (1-propylthiopropane; di-N-propyl sulfide). $(C_3H_7)_2S$; m.w. 118.17; liq.; b.p. 141-2; i.w.; s.al.

propyl sulfone (1-propylsulfonylpropane; dipropyl sulfone). $(CH_3CH_2CH_2)_2SO_2$; m.w. 150.17; sc.; m.p. 29-30; s.w.; s.al.

propynal. See propiolaldehyde.

propyne (propine; methylacetylene; allylene). $CH_3C{:}CH$; m.w. 40.03; gas; m.p. −104.7; b.p. −23; s.w.; s.al.

propyne, 3-bromo- (propargyl bromide; γ-bromoallylene). $CH{:}CCH_2Br$; m. w. 118.94; liq.; b.p. 88-90.

propyne, 3-chloro- (propargyl chloride). $CH{:}CCH_2Cl$; m.w. 74.48; liq.; b.p. 65; i.w.; s.al.

propyne, 3-ethoxy- (ethyl propargyl ether). $CH{:}CCH_2OC_2H_5$; m.w. 84.06; liq.; b.p. 80; i.w.; s.al.

propyne, 3-iodo- (propargyl iodide). $CH{:}CCH_2I$; m.w. 165.94; liq.; b.p. 115.

propyne, 3-methoxy- (methyl propargyl ether). $CH{:}CCH_2OCH_3$; m.w. 70.05; col. liq.; b.p. 62; s.w.; s.al.

propyne, 1-phenyl- (methylphenylacetylene; 1-propynylbenzene; phenylallylene). $C_6H_5C{:}CCH_3$; m.w. 116.06; arom. oil; b.p. 185; i.w.

propynoic acid. See propiolic acid.

2-propyn-1-ol (propargyl alcohol; ethynylcarbinol; acetylenylcarbinol; propiolic alcohol). $CH{:}CCH_2OH$; m. w. 56.03; col. liq.; m.p. −17; b.p. 115; s.w.; s.al.

2-propyn-1-ol, acetate (propargyl acetate). $CH_3COOCH_2C{:}CH$; m.w. 98.-05; col. liq.; b.p. 125; s.w.; s.al.

propytal. See barbituric acid, 5, 5-dipropyl-.

Prostearin. Propylene glycol monostearate.

protamine. A basic protein found in fish sperm, containing the amino acids arginine, histidine, and lysine.

protease. A protein-digesting enzyme, e.g. pepsin.

protective colloid. A colloid which prevents precipitation or coagulation of another colloid.

Protectoid. A cellulose acetate plastic, available in transparent, translucent and opaque, colored and colorless forms; thermoplastic, of excellent molding and machining properties, slow burning, resistant to hydrocarbons and oils.

Protegin X. Absorption base consisting chiefly of petrolatum and oxycholesterin.

proteids. Term applied to alcohol-coagulable, conjugated proteins, soluble in strong acetic acid.

proteins. Extremely complex nitrogenous compounds formed in living organisms, consisting of α-amino acids bound together by the peptide linkage, the molecular weight varying from about 30,000 to over 150,000.

protein, meta-. See metaprotein.

protein, simple. See simple protein.

proteoclastic. See proteolytic.

proteolysis. Enzymic hydrolysis of proteins.

proteolytic (proteoclastic). Term applied to enzymes which hydrolyze proteins.

proteose (albumose). A product of protein hydrolysis, soluble in water and not coagulated by heat or precipitated by ammonium sulfate.

protium. Hydrogen with atomic weight of one.

proto-. Prefix signifying *first.*

proto compound. That compound in a series which contains one atom of the electronegative element.

protoactinium. Pa; at.wt. 231; at. no. 91; a radioactive element; first element of the actinium series of radioactive elements.

protocatechualdehyde (3, 4-dihydroxybenzaldehyde; 3, 4-dihydroxybenzenecarbonal). $(HO)_2C_6H_3CHO$; m.w. 138.05; col. tab. f.w.; m.p. 154; s.al.

protocatechualdehyde, dimethyl ether. See veratraldehyde.

protocatechualdehyde, 4-ethyl 3-methyl ether. See benzaldehyde, 4-ethoxy-3-methoxy-.

protocatechualdehyde, methylene ester. See piperonal.

protocatechualdehyde, 3-methyl ether. See vanillin.

protocatechualdehyde, 4-methyl ether. See isovanillin.

protocatechuic acid (3, 4-dihydroxybenzoic acid; 3, 4-dihydroxybenzenecarboxylic acid). $(OH)_2C_6H_3COOH$; m.w. 154.05; monocl. need.; s.w.; s.al.

protocatechuic acid, dimethyl ether. See veratric acid.

protocatechuic acid, methylene ester. See piperonylic acid.

protolysis (protolytic reaction). An acid-base reaction; a reaction which consists essentially of a transfer of hydrogen ions from one substance (an acid) to another (a base).

protolyte. Term embracing acids and bases.

protolytic reaction. See protolysis.

proton. Nucleus of hydrogen atoms; a unit of positive electricity equal to 4.77×10^{-10} e.s.u.

proton acceptor. An atom, molecule or ion capable of taking up a proton.

protopine. $C_{20}H_{19}NO_5$; m.w. 353.16; monocl. cr.; m.p. 207; i.w.; s.al.

protoplasm. See bioplasm.

prototrophic. Term applied to class of bacteria which makes its food from inorganic substances, e.g. azotobacter.

prototropy. Phenomenon of proton-shifting.

protoveratrine. $C_{32}H_{51}NO_{11}$; m.w. 625.41; rect. tab.; m.p. 245-50; s.al.

protozoa. Unicellular microscopic animals.

proustite (ruby silver ore). A mineral, $3Ag_2S \cdot As_2S_3$; hex., scarlet to vermilion; sp.gr. 5.51-5.64; hardness 2.0-2.5.

Prussian blue. See iron ferrocyanide(ic).

Prussian green. See iron ferricyanide (ous, ic).

probable error. In a number of observations, the probable limit of the deviations from the mean.

prussiate. Ferrocyanide or ferricyanide, e.g. red prussiate of potash (potassium ferricyanide) and yellow prussiate of potash (potassium ferrocyanide).

prussic acid. See hydrocyanic acid.

prussite. See cyanogen.

Prystal. Synthetic tar-acid resin.

pseudaconine, acetylbenzoyl-. See indaconitine.

pseudaconine, acetylveratryl-. H_2-pseudaconitine.

pseudaconitine (acetylveratrylpseudaconine). $C_{34}H_{49}NO_{12}$; m.w. 687.39; rhomb. f. chl. + et.; s.w.; s.al.

pseudo-. Prefix signifying *false.*

pseudo acid. Organic compound which is itself not an acid but which is able to develop acidic properties thru slow tautomeric change.

pseudo base. Triphenylmethane dye which fades in color due to the slow tautomeric change from the quinonoid color base to the colorless carbinol base.

pseudobrookite. A mineral, $2Fe_2O_3 \cdot 3TiO_2$; rhomb., dk. br. to blk.; sp.gr. 4.4-4.9; hardness 6.

pseudobutylene. See 2-butene.

pseudobutylene glycol. See 2, 3-butanediol.

pseudocinchonine. See cinchotine.

pseudocodeine. $C_{18}H_{21}NO_3$; m.w. 299.17; col. need.; m.p. 181; s.w.; s.al.

pseudoconhydrine (ψ-conhydrine). $C_8H_{17}NO$; m.w. 143.14; slend. col. need.; m.p. 105-6; b.p. 236.5; s.w.; s.al.

pseudoconiceine. $C_8H_{15}N$; m.w. 125.13; oily liq.; b.p. 171-2.

pseudocumene (1, 2, 4-trimethylbenzene; astrimethylbenzene). $(CH_3)_3C_6H_3$; m.w. 120.09; col. liq.; m.p. −57.4; b.p. 169.8; i.w.; s.al.

pseudocumene, 5-nitro-. $NO_2C_6H_2$-$(CH_3)_3$; m.w. 165.09; lng. col. or grn.-yel. need.; m.p. 65; b.p. 265; s.al.

pseudocumene, 6-nitro- (1, 2, 4-trimethyl-6-nitrobenzene). $NO_2C_6H_2$-$(CH_3)_3$; m.w. 165.09; grn. pr.; m.p. 20; s.al.

pseudocumene, 3, 5, 6-trinitro-. $(NO_2)_3$-$C_6(CH_3)_3$; m.w. 255.09; pr.; m.p. 185; i.w.; s.al.

pseudocumenol (2, 4, 5-trimethylphenol). $(CH_3)_3C_6H_2OH$; m.w. 136.09; need. f.w.; m.p. 72; b.p. 235; s.w.; s.al.

pseudocumidine (2, 4, 5-trimethylaniline). $(CH_3)_3C_6H_2NH_2$; m.w. 135.11; col. need. f.al.; m.p. 66-8; b.p. 234-5; s.al.

pseudoephedrine (d) (2-methylamino-1-phenyl-1-propanol [one form]; d-isoephedrine). C_6H_5CHOH-$CH(NHCH_3)CH_3$; m.w. 165.13; col. rhomb. tab. f. et.; m.p. 116-7; s.w.; s.al.

pseudoephedrine, hydrochloride. $C_{10}H_{15}$-$NO \cdot HCl$; m.w. 201.59; ylsh. need.; m.p. 176; s.w.; s.al.

pseudohexyl alcohol. See 1-butanol, 2-ethyl-.

pseudohyoscyamine. $C_{17}H_{23}NO_3$; m.w. 289.19; ylsh. need.; m.p. 133-4; s.w.; s.al.

3-pseudoindolone, 2-chloro-. See isatin chloride.

pseudoisatin, 1-acetyl- (acetylisatin). $C_6H_4N(COCH_3)COCO$; m.w. 189.06; yel. need. f. bz.; m.p. 141; s.w.; s.al.

pseudoleucaniline. See mp-leucaniline.

pseudometal. The ammonium radical and its alkyl derivatives, e.g. $N(C_2H_5)_4^+$.

pseudomonas. Genus of schizomycetes having polar flagella.

pseudomorphic. Of definite geometric external form but composed of differently formed smaller crystals.

pseudomorphine. $C_{34}H_{36}N_2O_6$; m.w. 568.30; crusts or need.; i.w.; i.al.

pseudomorphine, hydrochloride (l). $C_{34}H_{36}N_2O_6 \cdot 2HCl \cdot 2H_2O$; m.w. 677.26; cr. powd.; s.w.

pseudopelletierine (methylgranatonine; ψ-pelletierine). $C_9H_{15}NO$; m.w. 153.13; pl. f. pet. eth.; m.p. 48-9; b.p. 246; s.w.; s.al.

pseudophenol. Phenol having o- or p-side chain with a halogen in alpha position with respect to the ring.

pseudoscalar. Scalar whose sign changes when reference axes are changed from right-handed to left-handed system.

pseudotropeine, benzoyl-. See tropacocaine.

1-PF[illegible]E

[illegible]-pr[illegible]
p[illegible]
[illegible]

, m.w. 141.13; et.; m.p. 108;

See calcium silicate

[illegible]

[illegible]olack hematite). A [illegible]nO$_2$,BaO,H$_2$O,K$_2$O, etc.; [illegible]st., iron blk. to gray; sp.gr. [illegible] hardness 5-6.

[illegible] seed (fleaseed). Seed of the [illegible]ntago psyllum; used in sizing [illegible]aper and silk, printing textiles, in medicine.

ptomaines. Basic products formed from putrefying flesh, by decarboxylation of amino acids or from other flesh constituents, not generally notably poisonous, "ptomaine poisoning" being due usually not to ptomaines, but to bacterial infection.

ptyalin. Salivary enzyme which converts hydrolyzed starch and certain other polysaccharides to maltose.

pucherite. $BiVO_4$; sp.gr. 6.25; red.-br.; a mineral.

puckering. Crinkling or shriveling of a surface coating.

puering. See bating.

pukateine (1). $C_{17}H_{17}NO_3$; m.w. 283.14; cr.f.al.; s.al.

pulegone (4 [8]-p-methen-3-one). $C_{10}H_{16}O$; m.w. 152.12; col. liq.; b.p. 224; i.w.; s.al.

pulp, chemical. Wood pulp from which non-cellulosic matter has been removed by chemical treatment.

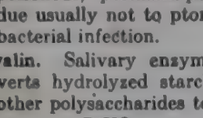
pumice. An abrasive powder made from a porous volcanic stone (pumice stone).

pummace. See pomace.

punicine. See pelletierine.

pure culture. Bacterial growth in which all bacteria are of the same species.

purine (imidazo [4, 5-d] pyrimidine). $C_5H_4N_4$; m.w. 120.06; need. f.al.; m.p. 217; s.w.; s.al.; the structural formula is as follows, the nuclear atoms being numbered as shown:



purine base. Base derived from purine, e.g. caffein.

purine, 6-amino-. See adenine.

2, 6 (1, 3) purinedione. See xanthine.

purine, 2, 6-dioxy-. See xanthine.

2, 6, 8 (1, 3, 9)-purinetrione. See uric acid.

purine, 2, 6, 8-trioxy-. See uric acid.

6 (1) purinone. See hypoxanthine.

Purit. Vegetable decolorizing carbon.

purple copper ore. See bornite.

purpuric acid, ammonium salt. See murexide.

purpurin (1, 2, 4-trihydroxyanthraquinone). $C_6H_4(CO)_2C_6H(OH)_3$; m.w. 256.06; red. need. f.al.; m.p. 256; s.w.; s.al.

purpuroxanthin (1, 3-dihydroxyanthraquinone). $C_6H_4(CO)_2C_6H_2(OH)_2$; m.w. 240.06; yel. need. f.ac.a.; m.p. 262-3; i.w.; s.al.

pustulant. Term applied to drug that produces blisters.

putrefaction. Microbic decomposition of animal and vegetable compounds.

putrescine (1, 4-butanediamine; tetramethylenediamine). $NH_2(CH_2)_4NH_2$; m.w. 88.11; leaf.; m.p. 27; b.p. 158; s.w.; s.al.

putty. A mixture of linseed oil 18%, with whiting (chalk) to which white lead may be added.

pycnometer (pyknometer). A glass vessel of convenient shape and design for the determination of specific gravity of liquids by weighing.

pycnosis. The fusing together of all the chromosomes of a nucleus to form a single mass.

pyknometer. See pycnometer.

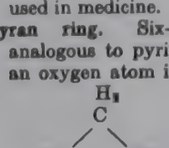
pyocyanine. $C_{28}H_{24}O_2N_4$; m.w. 424.19; a blue pigment produced by bacillus pyocyanus.

pyraconitine. $C_{32}H_{43}NO_9$; m.w. 585.34; need.; m.p. 167-8; s.w.; s.al.

Pyralin. A cellulose nitrate plastic, available in transparent, translucent, opaque colored and colorless forms, thermoplastic, of good molding and machining properties, resistant to hydrocarbons and oils.

pyramidone (amidopyrine; dimethylaminopyrine). $C_9ON_3(CH_3)_4C_6H_5$; m.w. 231.13; m.p. 107-9; col. cryst.; used in medicine.

pyran ring. Six-membered system analogous to pyridine but containing an oxygen atom in place of nitrogen,



1, 2-pyran-5-carboxylic acid, 2-oxo-. See coumalic acid.

1, 4-pyran-2, 6-dicarboxylic acid, 3-hydroxy-4-keto-. See meconic acid.

1, 4-pyran-2, 5-dicarboxylic acid, tetrahydro-2, 6, 6-trimethyl-. See cineolic acid.

2, 4-pyrandione, 3-acetyl-6-methyl-. See dehydroacetic acid.

1, 4-pyran, 4-keto-. See 1, 4-pyrone.

pyran, tetrahydro- (pentamethylene oxide). $O(CH_2)_4CH_3$; b.p. 81-2; s.w.; s.al.

pyranthrene (indanthrene golden orange). An orange vat dye.

pyrantin. See succinamide, N-p-phenetyl-.

pyrargyrite (dark red silver ore). A mineral, Ag_3SbS_3; hex. (trig.), dk. red to gray or blk.; sp.gr. 5.77-5.86; hardness 2.5.

pyrazine (1, 4-diazine; paradiazine; pinzine). $N:CHCH:NCH:CH$; m.w. 80.05; col. pr.f.w.; m.p. 53; b.p. 118; s.w.; s.al.

pyrazine, 2, 5-dimethyl-. See ketine.

pyrazine, hexahydro-. See piperazine.

pyrazole (1, 2-diazole; α-pyrromonazole). $NHN:CHCH:CH$; m.w. 68.05; need. f.al.; m.p. 70; b.p. 188; s.w.; s.al.

pyrazole, 4, 5-dihydro-. See 2-pyrazoline.

pyrazole, 4, 5-dihydro-5-oxo-. See 5-pyrazolone.

2-pyrazoline (Δ_2-pyrazoline; 4, 5-dihydropyrazole; pyrazoline). $NHN:CHCH_2CH_2$; m.w. 70.06; col. liq.; b.p. 144; s.w.; s.al.

2-pyrazoline, 1-phenyl-. $C_6H_5NN:CHCH_2CH_2$; m.w. 146.09; cr.; m.p. 52; b.p. 273; i.w.; s.al.

5-pyrazolone (4, 5-dihydro-5-oxypyrazole). $NHN:CHCH_2CO$; m.w. 84.05; need. f.tol.; m.p. 165; s.w.; s.al.

3-pyrazolone, 1, 5-dimethyl-2-phenyl-. See antipyrine.

3-pyrazolone, 1, 5-dimethyl-2-phenyl-3-thio-. See thiopyrine.

5-pyrazolone, 3-methyl-1-phenyl-. $C_{10}H_{10}N_2O$; m.w. 174.09; wh. powd.; m.p. 127.0-128.0; s.al.; i.w.; a dye intermediate used in manufacture of pharmaceuticals.

5-pyrazolone, 3-methyl-3-phenyl-. $N(C_6H_5)N:C(CH_3)CH_2CO$; m.w. 174.09; pr.; m.p. 127; b.p. 287 ^{205}; i.w.; s.al.

pyrene (benzo [def] phenanthrene). $C_{16}H_{10}$; m.w. 202.08; lt. yel. monocl. tab.; m.p. 150; b.p. >360; i.w.

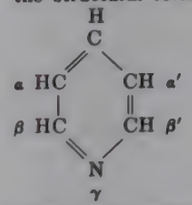
pyrethrins. The two compounds $C_{21}H_{30}O_3$ and $C_{22}H_{30}O_5$ present in pyrethrum powder, believed to be its actives principles.

pyrethrum. In botany, a section of the genus *Chrysanthemum*, also the insecticide obtained from the flowers of these plants; an active substance used in fly sprays, etc.

Pyrex glass. A glass composed largely of silica (80), boron oxide, B_2O_3 (12), and in addition, sodium oxide, Na_2O, and alumina, Al_2O_3; having a low coefficient of expansion; used in chemical glassware and cooking vessels.

pyridazine (1, 2-diazine; orthodiazine). $N:NCH:CHCH:CH$; m.w. 80.05; col. liq.; m.p. −8; b.p. 208; s.w.; s.al.

pyridine. C_5H_5N; m.w. 79.05; col. liq.; m.p. −42; b.p. 115.3; s.w.; s.al.; the structural formula is:



pyridine bases, refined. A mixture of tar bases, consisting essentially of pyridine and its homologs, refined to conform to a specification.

pyridine number. Index of sorbitol content of commercial sorbitol.

pyridine, 2-allyl-. $C_5H_4C_3H_4N$; m.w. 119.08; liq.; b.p. 190; s.w.; s.al.

pyridine, 2-amino- (α-pyridylamine). $NH_2C_5H_4N$; m.w. 94.06; leaf. f. lgr.; m.p. 56; b.p. 204; s.w.; s.al.

pyridine, 3-amino- (β-pyridylamine). $NH_2C_5H_4N$; m.w. 94.06; leaf. f.bs.; m.p. 64; b.p. 252; s.w.; s.al.

pyridine, 4-amino- (γ-pyridylamine). $NH_2C_5H_4N$; m.w. 94.06; col. need. f. bs.; m.p. 158; s.w.; s.al.

pyridine, 2-benzyl-. $C_5H_4CH_2C_5H_4N$; m.w. 169.09; need.; m.p. 139; b.p. 276 ^{743}; i.w.; s.al.

pyridine, 3-benzyl-. $C_5H_4CH_2C_5H_4N$; m.w. 169.09; need.; m.p. 34; b.p. 286 ^{740}; i.w.; s.al.

pyridine, 3-bromo-. BrC_5H_4N; m.w. 157.96; oil; b.p. 169-70; s.w.; s.al.

2-pyridinecarboxylic acid. See picolinic acid.

3-pyridinecarboxylic acid. See nicotinic acid.

4-pyridinecarboxylic acid. See isonicotinic acid.

pyridine, 2-chloro- (α-chloropyridine). ClC_5H_4N; m.w. 113.50; oily liq.; b.p. 170; s.w.

pyridine, 3-chloro- (β-chloropyridine). ClC_5H_4N; m.w. 113.50; liq.; b.p. 148 ^{744}; s.w.

pyridine, 4-chloro- (γ-chloropyridine). ClC_5H_4N; m.w. 113.50; liq.; b.p. 147-8; s.w.

pyridine, 3, 5-dibromo-. $C_5H_3Br_2N$; m.w. 236.86; col. need. f.al.; m.p. 112; b.p. 222; s.w.; s.al.

2, 3-pyridinedicarboxylic acid. See quinolinic acid.

2, 4-pyridinedicarboxylic acid. See lutidinic acid.

2, 5-pyridinedicarboxylic acid. See isocinchomeronic acid.

2, 6-pyridinedicarboxylic acid. See dipicolinic acid.

3, 4-pyridinedicarboxylic acid. See cinchomeronic acid.

3, 5-pyridinedicarboxylic acid. See dinicotinic acid.

pyridine, dihydroxy-. See pyridinediol.

pyridine, dimethyl-. See lutidine.

2, 4-pyridinediol (2, 4-dihydroxypyridine). $C_5H_3N(OH)_2$; m.w. 111.05; yel. rhomb. cr. f.w. or al.; m.p. 265; s.w.; s.al.

2, 6-pyridinediol (2, 6-dihydroxypyridine). $C_5H_3N(OH)_2 \cdot H_2O$; m.w. 129.06; yel. need. f.w.; m.p. 195; s.w.; s.al.

pyridine, 2-ethyl- (α-ethylpyridine). $C_2H_5 \cdot C_5H_4N$; m.w. 107.08; liq.; b.p. 148.8; s.w.; s.al.

pyridine, 3-ethyl- (β-ethylpyridine). $C_2H_5 \cdot C_5H_4N$; m.w. 107.08; col. liq.; b.p. 165.3; s.w.; s.al.

pyridine, 4-ethyl- (γ-ethylpyridine). $C_2H_5 \cdot C_5H_4N$; m.w. 107.08; col. liq.; b.p. 166.

pyridine, 2-ethyl, 3, 5-dimethyl-. See α-parvoline.

pyridine, 3-ethyl-4-methyl-. See β-collidine.

pyridine, 4-ethyl-2-methyl-. See α-collidine.

pyridine, 5-ethyl-2-methyl-. See aldehydine.

pyridine, hydroxy-. See pyridol.

pyridine, hexahydro-. See piperidine.

pyridine, 2-isopropyl-. $(CH_3)_2CHC_5H_4N$; m.w. 121.09; liq.; b.p. 159; s.w.; s.al.

pyridine, 4-isopropyl-. $(CH_3)_2CHC_5H_4N$; m.w. 121.09; liq.; b.p. 178; s.w.; s.al.

pyridine, 4-methoxy-. $N:CHCH:C(OCH_3)CH:CH$; m.w. 109.06; liq.; b.p. 191; s.w.

pyridine, methyl-. See picoline.

pyridine, 3-(1-methyl-2-pyrryl)-. See nicotyrine.

pyridinepentacarboxylic acid. $C_5N(COOH)_5 \cdot 2H_2O$; m.w. 335.08; cr. f. et. $2H_2O$, f.w. $3H_2O$; m.p. $-H_2O$ 100; s.w.

pyridine, 2-phenyl-. $C_6H_5C_5H_4N$; m.w. 155.08; liq.; b.p. 270; i.w.; s.al.

pyridine, 3-phenyl-. $C_6H_5C_5H_4N$; m.w. 155.08; oil; b.p. 270.4; i.w.; s.al.

pyridine, 4-phenyl-. $C_6H_5C_5H_4N$; m.w. 155.08; leaf. f.w.; m.p. 78; b.p. 275; s.w.; s.al.

pyridine, 2-propyl-. See conyrine.

3-pyridinesulfonic acid. $C_5H_4NSO_3H$; m.w. 159.11; need. or leaf.; s.w.; s.al.

pyridine, 1, 2, 3, 4-tetrahydro-6-propyl-. See γ-coniceine.

pyridine, tetramethyl-. See β-parvoline.

2, 3, 4-pyridinetricarboxylic. See carbocinchomeronic acid.

2, 4, 5-pyridinetricarboxylic acid. See berberonic acid.

2, 4, 6-pyridinetricarboxylic acid. See trimesitic acid.

3, 4, 5-pyridinetricarboxylic acid (β-carbocinchomeronic acid). $C_5H_2N(COOH)_3$; m.w. 211.05; leaf. or pl.; m.p. $-H_2O$ 115, anh. 261; s.h.w.

pyridine, 2, 4, 6-trihydroxy-. See 2, 4, 6-pyridinetriol.

pyridine, 2, 4, 6-trimethyl-. See γ-collidine.

2, 4, 6-pyridinetriol (2, 4, 6-trihydroxypyridine). $C_5H_2N(OH)_3$; m.w. 127.05; need. or powd.; s.w.; s.al.

2-pyridol (2 [1]-pyridone; α-pyridone). HOC_5H_4N; m.w. 95.05; col. need. f. bs.; m.p. 107; b.p. 281; s.w.; s.al.

3-pyridol (3-hydroxypyridine). HOC_5H_4N; m.w. 95.05; need.; m.p. 129; s.w.; s.al.

4-pyridol (4 [1]-pyridone; γ-pyridone). HOC_5H_4N; m.w. 95.05; col. monocl.; m.p. $+H_2O$ 92, anh. 148.5; b.p. >350; s.w.; s.al.

α-pyridone. See 2-pyridol.

γ-pyridone. See 4-pyridol.

2 (1)-pyridone. See 2-pyridol.

4 (1)-pyridone. See 4-pyridol.

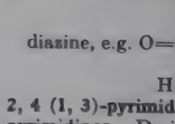
α-pyridylamine. See pyridine, 2-amino-.

β-pyridylamine. See pyridine, 3-amino-.

γ-pyridylamine. See pyridine, 4-amino-.

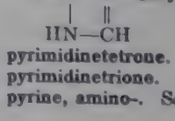
pyrimidine (1, 3-diazine; metadiazine; miazine). $N:CHN:CHCH:CH$; m.w. 80.05; cr.; m.p. 22; b.p. 124; s.w.; s.al.

pyrimidine bases. Derivatives of 1, 3-diazine, e.g.



2, 4 (1, 3)-pyrimidinedione. See uracil.

pyrimidines. Derivatives of uracil, e.g.



pyrimidinetetrone. See alloxan.

pyrimidinetrione. See barbituric acid.

pyrine, amino-. See pyramidone.

pyrite (iron pyrites, fool's gold). A mineral, FeS_2; cub., pa. brass to gold yel.; sp.gr. 4.95-5.17; hardness 6.0-6.5.

pyrites, cobalt. See linnaelte.

pyrites, copper. See copper pyrites.

pyrites, magnetic. See pyrrhotite.

pyro-. Prefix signifying heat or heat action, e.g. pyrosulfuric acid, $H_2S_2O_7$, is derivable from sulfuric acid by heating.

pyrobitumen. Natural infusible hydrocarbon complex.

pyrocatechol (1, 2-benzenediol; catechol; pyrocatechin). $C_6H_4(OH)_2$; m.w. 110.05; col. monocl. leaf. f. bs.; m.p. 105; b.p. 240; s.w.; s.al.

pyrocatechol-o-acid. See benzoic acid, 2, 3-dihydroxy-.

pyrocatechol, dibutyl ether. See benzene, 1, 2-dibutoxy-.

pyrocatechol, diethyl ether. See benzene, 1, 2-diethoxy-.

pyrocatechol, dimethyl ether. See veratrole.

pyrocatechol, dipropyl ether. See benzene, 1, 2-dipropoxy-.

pyrocatechol, 3-methoxy- (pyrogallol 1-methyl ether). $CH_3OC_6H_3(OH)_2$; m.w. 140.06; need.; m.p. 38-41; b.p. 146-7 $^{15-18}$.

pyrocatechol, 3-methyl- (3-methyl-1, 2-benzenediol; isohomopyrocatechol; 2, 3-dihydroxytoluene). $CH_3C_6H_3(OH)_2$; m.w. 124.06; leaf. f. bs.; m.p. 68; b.p. 241; s.w.; s.al.

pyrocatechol, 4-methyl-. See 4-homopyrocatechol.

pyrocatechol, monoamyl ether. See phenol, o-amoxy-.

pyrocatechol, monobutyl ether. See phenol, o-butoxy-.

pyrocatechol, monoethyl ether. See phenol, o-ethoxy-.

pyrocatechol, monomethyl ether. See guaiacol.

pyrocatechol, monopropyl ether. See phenol, o-propoxy-.

o-pyrocatechuic acid. See benzoic acid, 2, 3-dihydroxy-.

pyrochlorite (pyrochlore). A mineral, $RNb_2O_6 \cdot R(Ti,Th)O_3$; cub., br.-blk.; sp.gr. 4.2-4.36; hardness 5.0-5.5.

pyrochroite. A mineral, $Mn(OH)_2$; trig., rhbdr., wh.; dk. on expos.; sp.gr. 3.258; hardness 2.5.

pyrocoll (5, 10-dipyrrolo [1, 2-a, 1, 2-d]-pyrazinedione). $C_4H_3N(CO)_2NC_4H_3$; m.w. 183.06; yel. monocl. leaf.; m.p. 269; i.w.; s.al.

pyrodin. See hydrazine, 1-acetyl-2-phenyl-.

pyrogallic acid. See pyrogallol.

pyrogallol (1, 2, 3-benzenetriol; v-trihydroxybenzene). $C_6H_3(OH)_3$; m.w. 126.05; sp.gr. 1.46; need. or leaf.; m.p. 133-4; b.p. 309; s.w.; s.al.

pyrogallol, 4-acetyl-. See gallacetophenone.

pyrogallol, 4-benzoyl-. See benzophenone, 2, 3, 4-trihydroxy-.

4-pyrogallolcarboxylic acid. See benzoic acid, 2, 3, 4-trihydroxy-.

pyrogallol, 1, 2-dimethyl ether. See phenol, 2, 3-dimethoxy-.

pyrogallol, 1, 3-dimethyl ether. See phenol, 2, 6-dimethoxy-.

pyrogallol, 5-methyl- (3, 4, 5-trihydroxytoluene). $CH_3C_6H_2(OH)_3$; m.w. 140.06; need. f.bs.; m.p. 129.

pyrogallol, 1-methyl ether. See pyrocatechol, 3-methoxy-.

pyrogallol, 2-methyl ether. See resorcinol, 2-methoxy-.

pyrogallolphthalein. See gallein.

pyrogallol, triacetate. $C_6H_3(OOCCH_3)_3$; m.w. 252.09; wh. cr. powd.; m.p. 165; s.w.

pyrogallol, trimethyl ether. See benzene, 1, 2, 3-trimethoxy-.

pyroligneous acid (wood vinegar). The aqueous distillate obtained upon destructive distillation of dry wood, containing about 10% acetic acid, 2% methyl alcohol, and in smaller amounts, acetone and methyl acetate, darkly colored by suspended tar particles; used as source of methyl alcohol and acetic acid, and in smoking meats; sp.gr. 1.018-1.030.

pyrolle (2, 4 dimethyl-3, 5-diethyl dicarboxy pyrolle). M.w. 239; s.al., i.w.; very resistant to chemical action; used in dye synthesis.

pyrolusite (polianite). A mineral, $MnO_2(+nH_2O)$; rhomb., blk., steel gray; sp.gr. 4.73-4.86; hardness 2.0-2.5.

pyrolysis. Thermal decomposition.

pyromellitic acid (1, 2, 4, 5-benzenetetracarboxylic acid). $C_6H_2(COOH)_4$; m.w. 254.05; tricl. tab. $(+2H_2O)$ f.w.; m.p. 264; s.al.

pyrometer. Device for measuring at a distance high temperatures of bodies. *Optical pyrometers* estimate the temperature by the color or intensity of the light radiated from the body, *radiation pyrometers* by the heat effect of the radiation.

pyromorphite (green lead ore). A mineral, $PbCl_2 \cdot 3Pb_3(PO_4)_2$; hex., grn., yel., gray, br. or wh.; sp.gr. 6.50-7.12; hardness 3.5-4.0.

pyromucic acid (2-furancarboxylic acid; furoic acid; 2-furoic acid). C_4H_3OCOOH; m.w. 112.03; wh. monocl. need.; m.p. 131-2; b.p. 230-2; s.al.

pyromucic acid, amyl ester (n-amyl furoate; pentyl 2-furancarboxylate). $C_4H_3O \cdot COOC_5H_{11}$; m.w. 182.11; col. liq.; b.p. 95-7; i.w.; s.al.

pyromucic acid, 3-bromo- (3-bromofuroic acid). $C_4H_2BrO \cdot COOH$; m.w. 190.94; wh. need. f.w.; m.p. 127-9; s.al.

pyromucic acid, 5-bromo-. $BrC_4H_2O \cdot COOH$; m.w. 190.94; wh. leaf. f.w.; m.p. 186; s.w.; s.al.

pyromucic acid, 5-bromo-, ethyl ester. $BrC_4H_2O \cdot COOC_2H_5$; m.w. 218.97; pr.; m.p. 17; b.p. 235 ^{760}; i.w.; s.al.

pyromucic acid, butyl ester (n-butyl furoate). $C_4H_3O \cdot COOC_4H_9$; m.w. 168.09; col. liq.; b.p. 118-20 ^{25}; i.w.; s.al.

pyromucic acid, sec-butyl ester (sec-butyl furoate). $C_4H_3OCOOC_4H_9$; m.w. 168.09; col. liq.; b.p. 67-9 ^{1}; i.w.; s.al.

pyromucic acid, 3-chloro- (3-chloro-2-furancarboxylic acid; 3-chlorofuroic acid). $C_4H_2ClO \cdot COOH$; m.w. 146.48; wh. cr.; m.p. 148.5-9.5; i.w.; s.al.

pyromucic acid, 5-chloro- (5-chloro-2-furancarboxylic acid; 5-chlorofuroic acid). $C_4H_2ClO \cdot COOH$; m.w. 146.48; wh. leaf.; m.p. 179-80; s.al.

pyromucic acid, ethyl ester (ethyl pyromucate; ethyl furoate). $C_4H_3O \cdot COOC_2H_5$; m.w. 140.06; wh. cr. leaf.; m.p. 34; b.p. 195 ^{760}; i.w.; s.al.

pyromucic acid, furfuryl ester. See furfuryl alcohol, pyromucate.

pyromucic acid, heptyl ester (N-heptyl furoate). $C_4H_3OCOOC_7H_{15}$; m.w. 210.14; col. liq.; b.p. 116-7 ^{1}; i.w.; s.al.

pyromucic acid, hexyl ester (N-hexyl furoate). $C_4H_3OCOOC_6H_{13}$; m.w. 196.12; col. liq.; b.p. 105-7 ^{1}; i.w.; s.al.

pyromucic acid, isoamyl ester (isoamyl furoate). $C_4H_3O \cdot COOC_5H_{11}$; m.w. 182.11; col. liq.; b.p. 135-7 ^{25}; i.w.; s.al.

pyromucic acid, 5-methyl-. $CH_3C_4H_2O \cdot COOH$; m.w. 126.05; pl. or need. f.w.; m.p. 108-9; s.w.; s.al.

pyromucic acid, methyl ester (methyl furoate). $C_4H_3OCO_2CH_3$; m.w. 126.05; liq.; b.p. 181.3; s.al.

pyromucic acid, 5-methyl-, methyl ester. $CH_3C_4H_2O \cdot COOCH_3$; m.w. 140.06; col. liq.; b.p. 98 ^{15}.

pyromucic acid, 5-nitro-. $NO_2C_4H_2O \cdot COOH$; m.w. 157.03; wh. cr. f.w.; m.p. 185.0-5.5; s.w.; s.al.

pyromucic acid, octyl ester. $C_4H_3O \cdot COOC_8H_{17}$; m.w. 224.16; col. liq.; b.p. 126-7 ^{1}; i.w.; s.al.

pyromucic acid, propyl ester (N-propyl furoate). $C_4H_3OCOOC_3H_7$; m.w. 154.08; col. liq.; b.p. 211; s.al.

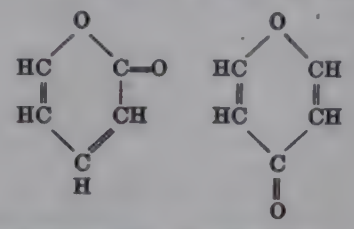
pyromucic acid, tetrahydro- (tetrahydrofuroic acid). $C_4H_7O \cdot COOH$; m.w. 116.06; wh. cr.; m.p. 21; b.p. 131-2 ^{14}.

pyromucyl chloride (2-furancarbonyl chloride; furoyl chloride). $C_4H_3O \cdot COCl$; m.w. 130.48; col. liq.; m.p. 0; b.p. 59.5-61.5 ^{7}.

1, 4-pyrone (4-keto-1, 4-pyran; γ-pyrone). OCH:CHCOCH:CH; m.w. 96.03; pr.; m.p. 32.5; b.p. 217.7; s.w.; s.al.

1, 4-pyrone, 5-hydroxy-2-hydroxymethyl-. See kojic acid.

pyrones. Derivatives of pyran in which the hydrogen atoms of the CH_2 group have been replaced by oxygen to form α- or γ-pyrone as respectively shown:



pyrophoric alloy. See auer metal.

pyrophyllite (pencil stone agalmatolite). A mineral, $Al_2O_3 \cdot 4SiO_2 \cdot H_2O$; monocl., wh., grn., yelsh., grayish; sp.gr. 2.66-2.90; hardness 1-3; used for tailor's chalk, paper filler.

pyroracemic acid. See pyruvic acid.

pyrostibnite. See kermesite.

pyrotartaric acid (methylbutanedioic acid; methylsuccinic acid). $COOH-CH_2CH(CH_3)COOH$; m.w. 132.06; tricl.; m.p. 111; s.w.; s.al.

pyrotartaric, α-hydroxy-. See citramalic acid.

pyrotechnics (pyrotechny). The art and science of preparing and using fireworks for display or for practical purposes.

pyrotritaric acid (2, 5-dimethyl-3-furancarboxylic acid; uvic acid; uvinic acid). $(CH_3)_2C_4HO \cdot COOH$; m.w. 140.06; col. need. f.w.; m.p. 135; s.al.

pyroxylin. Guncotton; crude cellulose hexanitrate; formed by nitration of fat-free cotton, and resembling the latter; used in explosives and the manufacture of lacquers.

pyrrhotine. See pyrrhotite.

pyrrhotite (magnetic pyrites). A mineral, Fe_9S_8 to $Fe_{10}S_{17}$; hex., yel., red to dk. br.; sp.gr. 4.53-4.66; hardness 3.5-4.5.

pyrrhotite, nickeliferous. See nickeliferous pyrrhotite.

pyrrocoline, octahydro-. See piperolidine.

pyrro(ab$_1$) diazole. See 1, 2, 4-triasole.

pyrrole (azole). NHCH:CHCH:CH; m.w. 67.05; col. liq.; b.p. 131; i.w.; s.al.

pyrrole, 1-acetyl- (N-acetylpyrrole). $CH_3CONC_4H_4$; m.w. 109.06; liq.; b.p. 181-2; s.w.

2-pyrrolecarboxylic acid. $C_4H_3N \cdot COOH$; m.w. 111.05; monocl. pr.; s.w.; s.al.

pyrrole, 2, 4-dimethyl-. $NHC(CH_3):CH-C(CH_3):CH$; m.w. 95.08; pa. bl. fluores. liq.; b.p. 165 ^{748}; s.w.; s.al.

pyrrole, 2, 5-dimethyl-. $NHC(CH_3):CH-CH:C(CH_3)$; m.w. 95.08; oil; b.p. 165; s.w.; s.al.

pyrrole, dihydro-. See pyrroline.

pyrrole, 1-ethyl- (N-ethylpyrrole). $C_2H_5NC_4H_4$; m.w. 95.08; b.p. 130-1; i.w.; s.al.

pyrrole, 1-methyl- (N-methylpyrrole). $N(CH_3)CH:CHCH:CH$; m.w. 81.06; col. liq.; b.p. 114-5 ^{748}; i.w.; s.al.

pyrrole, 2-methyl- (α-methylpyrrole). $NCH(CH_3):CHCH:CH$; m.w. 81.06; liq.; b.p. 148; i.w.; s.al.

pyrrole, 3-methyl- (β-methylpyrrole). $NCH:CH(CH_3)CH:CH$; m.w. 81.06; liq.; b.p. 143.

pyrrole, 1-propyl- (N-N-propylpyrrole). $CH_3CH_2CH_2NC_4H_4$; m.w. 109.09; liq.; b.p. 145.5-6.5.

pyrrole, tetrahydro-. See pyrrolidine.

pyrrole, tetrahydro-2-oxo-. See 2-pyrrolidone.

pyrrole, 2, 3, 4, 5-tetraiodo- (iodol). C_4I_4NH; m.w. 570.70; yel. need. f.dil.al.

pyrrolidine (tetrahydropyrrole; tetramethylenimine). $NHCH_2CH_2CH_2-CH_2$; m.w. 71.08; col. liq.; b.p. 88.5; s.w.; s.al.

2-pyrrolidinecarboxylic acid. See proline.

2, 5-pyrrolidinedione. See succinimide.

pyrrolidine, 2-keto-. See 2-pyrrolidone.

pyrrolidine, 1-methyl- (N-methylpyrrolidine). $CH_2NC_4H_8$; m.w. 85.09; liq.; b.p. 81-3; s.w.

2-pyrrolidone (2-ketopyrrolidine; α-pyrrolidone). $NHCOCH_2CH_2CH_2$; m.w. 85.06; cr.; m.p. 24.6; b.p. 245; s.w.; s.al.

pyrroline (dihydropyrrole). C_4H_9N; m.w. 67.05; liq.; b.p. 90; s.w.; s.al.

pyrrolylene. See 1, 3-butadiene.

α-pyrromonazole. See pyrasole.

pyruvaldehyde, aldoxime (2-oxopropanal 1-oxime; isonitrosoacetone). $CH_3COCH:NOH$; m.w. 87.05; leaf. f.et.; m.p. 69; s.w.

pyruvic acid (2-oxopropanoic acid; α-ketopropionic acid; pyroracemic acid; acetylformic acid). $CH_3COCOOH$; m.w. 88.03; col. liq.; m.p. 13.6; s.w.; s.al.

pyruvic acid, ethyl ester (ethyl pyruvate). $CH_3COCOOC_2H_5$; m.w. 116.06; col. liq.; b.p. 144; s.w.; s.al.

pyruvic acid, methyl ester (methyl 2-oxopropanoate; methyl pyruvate). $CH_3COCOOCH_3$; m.w. 102.05; col. liq.; b.p. 137; s.w.; s.al.

pyruvonitrile (2-oxopropanenitrile; acetyl cyanide). CH_3COCN; m.w. 69.03; rhomb.; b.p. 93.

pyschrophilic. Term applied to a class of bacteria that grow best in the cold (about 10° C.).

Q

Q branch. Group of molecular spectral lines corresponding to vibrational energy changes without any rotational energy change.

quadrant. Quarter of a circle or circumference of a circle; a surveying instrument resembling the sextant, but including an angle of only 90°.

quadratic equation. Equation in which the highest power of the unknown quantity is a square; an equation of the second degree.

quadrature. The wattless component of an alternating current which is one quarter of a cycle out of phase with the active component.

quadripole. See quadrupole.

quadrivalent. See tetravalent.

quadrupole (quadripole). Set of two equal parallel dipoles with reversed corresponding charges.

Quaker buttons. See nux vomica.

qualitative analysis. The determination by chemical means of the identity of a substance, or of the constituents of a mixture, without regard for the precise percentage composition. Compare *quantitative analysis*.

quantitative analysis. The precise determination of the proportions of the constituents of a substance or mixture.

quantity of electricity or charge. A quantity measured in terms of the electrostatic unit of charge or the quantity of electricity which, when concentrated at a point and placed at unit distance from an equal and similarly concentrated quantity, is repelled with unit force; the *electromagnetic* unit of quantity may be defined as that transferred by unit current in unit time.

quantization of energy. Assumption that the energy of a molecule is not infinitely variable between certain limits but that it can have only one of a definite set of values.

quantized. In quantum theory, made of, or having to do with quanta of energy.

quantum (quant). A finite unit or bundle of radiant energy emitted when an electron moves to the next inner orbit or energy level of an atom.

quantum efficiency (photochemical yield). The number of molecules actually decomposed per quantum of radiation absorbed.

quantum jump. See quantum transition.

quantum number. An integer assigned to an orbit, indicative of the energy of its electrons.

quantum number, radial. See radial quantum number.

quantum, Planck's. See Planck's quantum.

quantum state (energy level). State of an atom or molecule such that transition between states produces emission of radiation frequencies and quanta corresponding to spectral lines.

quantum theory. A theory describing emission and absorption of radiant energy in terms of small bundles or units, called "quanta," rather than as a continuous phenomenon.

quantum transition (quantum jump). Sharp change with emission or absorption of a quantum of radiant energy.

quarter phase. See phase, two.

quartz. A mineral, SiO_2; hex. (trig.), col. or yel., rose, br., grn., bl., gray; sp.gr. 2.59-2.660; hardness 7.

quassia (bitter ash; bitter wood). Preparation from the bark of quassia amara and picrasma excelsa, having a bitter taste and used as a fly poison, in medicine, etc.

quaternary system. A system having four components.

quebracho extract. An extract from the wood of the trees aspidosperma q. and q. lorentzu; used in tanning.

quenching. Quick cooling of heated metals by plunging into liquids, used to produce hardening.

quercetin (3, 3′, 4′, 5, 7-pentahydroxyflavone; meletin; sophoretin). $C_{15}H_{10}O_7$; m.w. 302.08; yel. need.

d-quercitol (cyclohexanepentol [one form]; d-quercite). $C_6H_7(OH)_5$; m.w. 164.09; col. monocl.; m.p. 234; s.w.; s.al.

quercitrin. $C_{21}H_{20}O_{11}$; m.w. 448.16; yel. need. or leaf.; m.p. 250-2; s.al.

quercitron bark. The bark of quercitron coccinea; used in tanning and dyeing.

quercitron extract. Extract from quercitron bark; a mordant used in dyeing and in printing and tanning leather.

quetch. Textile processing machine for wet treatments, consisting of two or three rollers, the bottom one of which is partially immersed in a tank of liquid.

quicklime. See calcium oxide.

quicksilver. See mercury.

quillaja. See soap bark.

quinacetophenone. See acetophenone, 2, 5-dihydroxy-.

quinaldic acid, 4-hydroxy-. See kynurenic acid.

quinaldine (2-methylquinoline). $CH_3C_9H_6N$; m.w. 143.08; col. liq.; b.p. 246-7; s.w.; s.al.

quinaldine, hydroxy-. See quinolinol, 2-methyl-.

quinaldine, methyl-. See quinoline, dimethyl-.

quinalgen. See analgen.

quinalizarin (1, 2, 5, 8-tetrahydroxyanthraquinone; alizarin bordeaux). $(HO)_2C_6H_2(CO)_2C_6H_2(OH)_2$; m.w. 272.06; red. rhomb. need.; m.p. >275; i.w.; s.al.

quinamine. $C_{19}H_{24}N_2O_2$; m.w. 312.20; need.; m.p. 172; i.w.; s.al.

p-quinanisole. See quinoline, 6-methoxy-.

quinazine. See quinoxaline.

quinazoline (benzo [a] pyrimidine; 1, 3-benzodiazine; phenmiazine). $C_6H_4N{:}CHN{:}CH$; m.w. 130.06; pl. f. pet. eth.; m.p. 48; b.p. 243; s.w.; s.al.

quinazoline, 3, 4-dihydro-3-phenyl- (orexin; phenzoline; cedrarine). $C_6H_4N{:}CHN(C_6H_5)CH_2$; m.w. 208.11; hex. pl.; m.p. 95; s.al.

Quincke tube. Filtering device for acoustic waves.

quinhydrone (benzoquinhydrone). $C_6H_4O_2 \cdot C_6H_4(OH)_2$; m.w. 218.08; dk. grn. rhomb. pr.; m.p. 171; s.w.; s.al.

quinhydrone electrode. A bright platinum electrode immersed in a saturated quinhydrone solution; used for measuring pH in neutral or acid solutions.

quinic acid (1, 2, 4, 5-tetrahydroxycyclohexanecarboxylic acid). $(HO)_4C_6H_7COOH$; m.w. 192.09; col. monocl. f.w.; m.p. 163; s.w.; s.al.

quinicine. $C_{20}H_{24}N_2O_3$; m.w. 324.20; yel. oil; m.p. 60; s.w.; s.al.

quinicine, oxalate (d). $(C_{20}H_{24}N_2O_2)_2 \cdot H_2C_2O_4 \cdot 9H_2O$; m.w. 900.56; pr. f. chl. or need. f.al.; m.p. 149; s.w.; s.al.

quinidine (conquinine). $C_{20}H_{24}N_2O_2 \cdot 2\frac{1}{2}H_2O$; m.w. 369.24; pr.f.al.

quinidine, bisulfate. $C_{20}H_{24}N_2O_2 \cdot H_2SO_4 \cdot 4H_2O$; m.w. 494.34; hair-like need., bl. fluores. in sol.; s.al.

quinidine, hydrochloride (d). $C_{20}H_{24}N_2O_2 \cdot HCl \cdot H_2O$; m.w. 378.68; asbestoslike pr.; s.al.

quinidine, sulfate (d). $(C_{20}H_{24}N_2O_2)_2 \cdot H_2SO_4 \cdot 2H_2O$; m.w. 782.51; pr. or need.; sol. fluores. bl.; s.al.

quinine (anhydrous). $C_{20}H_{24}N_2O_2$; m.w. 324.20; amor. powd.; m.p. 174.9; s.al.

quinine (hydrate). $C_{20}H_{24}N_2O_2 \cdot 3H_2O$; m.w. 378.25; flaky or micro. cr. powd., efflor.; m.p. 57; s.al.

quinine, arsenate. $(C_{20}H_{24}N_2O_2)_2 \cdot H_3AsO_4 \cdot 8H_2O$; m.w. 934.48; wh. cr.; s.w.

quinine, bisulfate. $C_{20}H_{24}N_2O_2 \cdot H_2SO_4 \cdot 7H_2O$; m.w. 548.39; sm. ortho-rhomb. need. efflor.; s.w.

quinine, dihydrochloride. $C_{20}H_{24}N_2O_2 \cdot 2HCl$; m.w. 397.13; wh. powd. or need.; s.w.; s.al.

quinine, formate. $C_{20}H_{24}N_2O_2 \cdot HCOOH$; m.w. 370.22; cr. powd.; m.p. 109; s.al.

quinine, hydrobromide. $C_{20}H_{24}N_2O_2 \cdot HBr \cdot H_2O$; m.w. 423.14; silky efflor. need.; m.p. 152-200; s.al.

quinine, (mono) hydrochloride. $C_{20}H_{24}O_2N_2 \cdot HCl$; m.w. 360.67; silky efflor. need.; m.p. 158-60; s.al.

quinine, (mono) hydrochloride (hydrate). $C_{20}H_{24}O_2N_2 \cdot HCl \cdot 2H_2O$; m.w. 396.70; silky efflor. need.; m.p. 156-90; s.al.

quinine, iodosulfate (herapathite). $4C_{20}H_{24}N_2O_2 \cdot 3H_2SO_4 \cdot 2HI \cdot I_4 \cdot 6H_2O$; m.w. 2462.69; red-grn. dichroic cr. or olive grn. powd.; s.al.

quinine, salicylate. $C_{20}H_{24}N_2O_2 \cdot C_7H_6O_3 \cdot H_2O$; m.w. 480.27; col. need.

quinine, sulfate. $(C_{20}H_{24}N_2O_2)_2 \cdot H_2SO_4$; m.w. 746.48; silky efflor. need.; m.p. anh. 235.

quinine, sulfate (hydrate). $(C_{20}H_{24}N_2O_2)_2 \cdot H_2SO_4 \cdot 2H_2O$; m.w. 782.51; silky cr. or need., efflor.; m.p. 205.

quinine, urea-hydrochloride. $C_{20}H_{24}O_2N_2 \cdot HCl \cdot CO(NH_2)_2 \cdot HCl \cdot 5H_2O$; m.w. 547.26; wh. pr. or powd.; m.p. 70-5; s.w.; s.al.

quinine, valerate. $C_{20}H_{24}N_2O_2 \cdot C_5H_{10}O_2 \cdot H_2O$; m.w. 444.30; cr. powd.; m.p. 90; s.al.

quinizarin (1, 4-dihydroxyanthraquinone). $C_6H_4(CO)_2C_6H_2(OH)_2$; m.w. 240.06; red need. f.al.; m.p. 194-5; s.al.

quinol. See hydraquinone.

quinoline (benzo [b] pyridine; 1-benzazine). $C_6H_4N{:}CHCH{:}CH$; m.w. 129.06; col. liq.; m.p. −19.5; b.p. 237.7; s.al.

quinoline, 2-amino- (α-quinolylamine). $NH_2C_9H_6N$; m.w. 144.08; leaf. f.w.; m.p. 129; s.w.; s.al.

quinoline, 4-amino- (γ-quinolylamine). $NH_2C_9H_6N$; m.w. 144.08; need. (+1H_2O) f.w.; m.p. anh. 154, 1H_2O 69-70; b.p. −H_2O, 100; s.w. s.al.

quinoline, 5-benzamido-8-ethoxy-. See analgen.

quinoline, 2-chloro- (α-chloroquinoline). ClC_9H_6N; m.w. 163.51; need. f. dil. al.; m.p. 37-8; b.p. 266-7; i.w.; s.al.

quinoline, 3-chloro- (β-chloroquinoline). ClC_9H_6N; m.w. 163.51; hyg.; b.p. 255 [743].

quinoline, 4-chloro- (γ-chloroquinoline). ClC_9H_6N; m.w. 163.51; cr.; m.p. 34; b.p. 261 [744]; s.al.

quinoline, decahydro-. $C_9H_{17}N$; m.w. 139.14.
cis: col. liq.; m.p. −40; b.p. 205-6; s.w.; s.al.
trans: wh. cr.; m.p. 48; b.p. 203 [745]; s.w.; s.al.

quinoline, 2, 3-dichloro-. $C_9H_5Cl_2N$; m.w. 197.96; cr.f.dil.al.; m.p. 104-5; i.w.; s.al.

quinoline, 5, 8-dichloro-. $C_9H_5Cl_2N$; m.w. 197.96; sh. need. f.al.; m.p. 93; s.al.

quinoline, 6, 8-dichloro-. $C_9H_5Cl_2N$; m.w. 197.96; lng. need. f.al.; m.p. 104-5; s.al.

quinoline, 7, 8-dichloro-. $C_9H_5Cl_2N$; m.w. 197.96; need.; m.p. 85.5; s.al.

quinoline, 2, 3-dimethyl- (3-methylquinaldine). $(CH_3)_2C_9H_5N$; m.w. 157.09; yel. need. or leaf.; m.p. 68-9; b.p. 261; s.w.; s.al.

quinoline, 2, 4-dimethyl- (4-methylquinaldine). $(CH_3)_2C_9H_5N$; m.w. 157.09; liq.; b.p. 264; s.w.; s.al.

quinoline, 2, 6-dimethyl- (p-toluquinaldine; 6-methylquinaldine). $(CH_3)_2C_9H_5N$; m.w. 157.09; trim. f. et.; m.p. 60; b.p. 266-7; s.w.; s.al.

quinoline, 3, 4-dimethyl-. $(CH_3)_2C_9H_5N$; m.w. 157.09; cr.; m.p. 73-4; b.p. 290 [737]; i.w.; s.al.

quinoline, 5, 8-dimethyl-. $(CH_3)_2C_9H_5N$; m.w. 157.09; liq.; m.p. 4-5; b.p. 265 [738]; s.w.; s.al.

quinoline, 6, 8-dimethyl- (β-cytisolidine). $(CH_3)_2C_9H_5N$; m.w. 157.09; liq.; b.p. 269; s.w.; s.al.

quinoline, 2-homopiperonyl-4-methoxy-. See cusparine.

quinoline, 6-methoxy- (p-quinanisole; methyl 6-quinolyl ether). $C_9H_6N{-}OCH_3$; m.w. 159.08; liq.; m.p. < −18; b.p. 186 [35]; s.al.

quinoline, 2-methyl-. See quinaldine.

quinoline, 3-methyl- (β-methylquinoline). $CH_3C_9H_6N$; m.w. 143.08; col. liq. or cr.; m.p. 14; b.p. 250; i.w.; s.al.

quinoline, 4-methyl-. See lepidine.

quinoline, 6-methyl-. $CH_3C_9H_6N$; m.w. 143.08; m.p. 10-4; b.p. 255; s.al.

quinoline, 7-methyl-. $CH_3C_9H_6N$; m.w. 143.08; yel. oil.; m.p. < −20; b.p. 252.5; s.al.

quinoline, 8-methyl-. $CH_3C_9H_6N$; m.w. 143.08; liq.; b.p. 247.3-8.3 [751]; s.al.

quinoline, 6-methyl-2-phenyl-4-carboxylic ethyl ester (novatophan; neocinchophen; neoquinophan). $C_{19}H_{17}NO_2$; m.w. 291.13; m.p. 75-76; yel.; s.w.; s.al.; used in medicine.

quinoline, 1-methyl-1, 2, 3, 4-tetrahydro-. See kairoline.

quinoline, 5-nitro-. $NO_2C_9H_6N$; m.w. 174.06; need. f.w.; m.p. 72; s.w.

quinoline, 6-nitro-. $NO_2C_9H_6N$; m.w. 174.06; need.; m.p. 150; s.w.; s.al.

quinoline, 7-nitro-. $NO_2C_9H_6N$; m.w. 174.06; need. f.al.; m.p. 133; s.al.

quinoline, 8-nitro-. $NO_2C_9H_6N$; m.w. 174.06; monocl. need. f.al.; m.p. 89; s.w.; s.al.

uinoline, 2-phenyl-. $C_6H_5C_9H_6N$; m.w. 205.09; need. f.al.; m.p. 86; b.p. 363; s.w.; s.al.

uinoline, 3-phenyl-. $C_6H_5C_9H_6N$; m.w. 205.09; trim. f. et. or al.; m.p. 111; b.p. 260 [77]; s.w.; s.al.

uinoline, 8-phenyl-. $C_6H_5C_9H_6N$; m.w. 205.09; thk. fluores. oil.; b.p. 283 [127]; s.al.

uinoline, 2-phenyl-, 4-carboxylic acid. See cinchophen.

uinoline, 1, 2, 3, 4-tetrahydro-. $C_9H_{11}N$; m.w. 133.09; col.-yel. cr.; m.p. 20; b.p. 251; s.w.; s.al.

uinoline, 1, 2, 3, 4-tetrahydro-6-methoxy-. See thalline.

uinoline, 2, 3, 4-trimethyl-. $C_9H_4N(CH_3)_3$; m.w. 171.11; cr.; m.p. *ca.* 65; b.p. 285.

uinoline, 2, 4, 5-trimethyl-. $C_9H_4N(CH_3)_3$; m.w. 171.11; need. f.w.; m.p. 63-4; s.w.

uinoline, 2, 5, 7-trimethyl- (tetracoline). $C_9H_4N(CH_3)_3$; m.w. 171.11; pr.; m.p. 43; b.p. 285-7; s.w.; s.al.

uinoline, 2, 6, 7-trimethyl-. $C_9H_4N(CH_3)_3$; m.w. 171.11; monocl.

uinoline, 2, 6, 8-trimethyl-. $C_9H_4N(CH_3)_3$; m.w. 171.11; monocl. pr.-f.lgr.; m.p. 46; b.p. 260 [719]; i.w.; s.al.

uinolinic acid (2, 3-pyridinedicarboxylic acid). $C_5H_3N(COOH)_2$; m.w. 167.05; monocl. pr.; s.al.

2-quinolinol. See carbostyril.

4-quinolinol (kynurine). $HOC_9H_6N \cdot 3H_2O$; m.w. 199.11; col. monocl. need. f.w.; m.p. $3H_2O$ 52, $-H_2O$ 100; anh. 201; s.al.

5-quinolinol. HOC_9H_6N; m.w. 145.06; pr. or leaf. f.al.; m.p. 224; s.w.; s.al.

6-quinolinol. HOC_9H_6N; m.w. 145.06; sm. pr. f.al.; m.p. 193; b.p. 360; s.w.; s.al.

7-quinolinol. HOC_9H_6N; m.w. 145.06; pr.f.al.; s.w.; s.al.

8-quinolinol. HOC_9H_6N; m.w. 145.06; pr.f.dil. al.; m.p. 76; b.p. 266.9; s.w.; s.al.

4-quinolinol, 2-methyl- (4-hydroxyquinaldine). $C_{10}H_9NO$; m.w. 159.08; pr.f.w.; m.p. 231; s.w.; s.al.

6-quinolinol, 2-methyl- (6-hydroxyquinaldine). $C_{10}H_9NO$; m.w. 159.08; cr.; m.p. 213; s.w.; s.al.

7-quinolinol, 2-methyl- (7-hydroxyquinaldine). $C_{10}H_9NO$; m.w. 159.08; leaf. f.al.; m.p. 232-4; i.w.; s.al.

8-quinolinol, 2-methyl- (8-hydroxyquinaldine). $C_{10}H_9NO$; m.w. 159.08; tricl. pr.f.al.; m.p. 74; b.p. 267.

2 (1)-quinolone. See carbostyril.

2 (1)-quinolone, 3, 4-dihydro-. See hydrocarbostyril.

α-quinolylamine. See quinoline, 2-amino-.

γ-quinolylamine. See quinoline, 4-amino-.

quinone, 2-methyl-. See toluquinone.

quinone, monoxime. See phenol, p-nitroso-.

quinone, nitro-. $NO_2C_6H_3O_2$; m.w. 153.03; yel.; s.w.; s.al.

quinone, tetrachloro-. See chloranil.

quinone, tetrahydro-. See 1, 4-cyclohexanedione.

quinone, tetrahydroxy-. $(HO)_4C_6O_2$; m.w. 172.03; bl. cr.; s.w.; s.al.

quinone, trichloro-. $Cl_3C_6HO_2$; m.w. 211.38; yel. leaf. f.w.; m.p. 168-9; i.w.; s.al.

quinosol (oxyquinoline sulfate, normal; chinosol). $(C_9H_7ON)_2 \cdot H_2SO_4$; m.w. 388.18; m.p. 175-7.5; yel. cryst. powd.; s.w.; s.al.; used in medicine.

quinovic acid. $C_{32}H_{48}O_6$; m.w. 528.37; wh. cr. powd.; i.w.; s.al.

quinoxaline (benzopyrazine; 1, 4-benzodiazine; quinazine). $C_6H_4N:CH-CH:N$; m.w. 130.06; wh. cr.; m.p. 30.5; b.p. 226; s.w.; s.al.

quintal. 100 kilograms; 100,000 grams; 220.5 pounds.

quintessence. Perfume residue left upon evaporation of the extracting alcohol.

quotient theorem. Any sets of symbols whose inner product with an arbitrary covariant (or contravariant) vector is a tensor, are themselves components of a tensor.

quinone (para or ordinary) (p-benzoquinone; 1, 4-cyclohexadienedione). $O:C_6H_4O$; m.w. 108.03; yel. monocl. pr.f.w.; m.p. 115.7; s.w.; s.al.

quinone, bischloroimide (p-benzoquinone bischloroimide). $C_6H_4(:NCl)_2$; m.w. 174.96; need. f.w.; s.w.; s.al.

quinone, chloroimide (p-benzoquinone monochloroimide). $O:C_6H_4:NCl$; m.w. 141.50; yel. cr. f. lgr.; m.p. 84.7-5.0; s.w.; s.al.

quinone, 2, 5-dichloro-3, 6-dihydroxy-. See chloranilic acid.

quinone, 2, 6-dichloro- (2, 6-dichloro-p-benzoquinone). $C_6H_2Cl_2O_2$; m.w. 176.93; yel. rhomb. pr.f.lgr. or bz.; m.p. 121; s.w.; s.al.

quinone, 2, 5-dihydroxy- (2, 5-dihydroxy-p-benzoquinone). $C_6H_2O_2(OH)_2$; m.w. 140.03; dk. yel. need. f.et.ac.; s.w.; s.al.

quinone, 2, 5-dihydroxy-3, 6-dinitro-. See nitranilic acid.

quinone, 2, 3-dimethyl-. See o-xyloquinone.

quinone, 2, 5-dimethyl-. See phlorone.

quinone, 2, 6-dimethyl-. See m-xyloquinone.

quinone, dioxime (p-benzoquinone dioxime). $C_6H_4(:NOH)_2$; m.w. 138.06; col. or yel. need.; s.w.

R

R acid. See 2-naphthol-3, 6-disulfonic acid.

R branch. Group of molecular spectral lines corresponding to unit decreases in rotational quantum number.

R-M number. Reichert-Meissl number (q.v.).

R salt. See 2-naphthol, 3, 6-disulfonic acid, sodium salt.

r-unit. See roentgen unit.

Rabi field. Magnetic field for deflecting particles with an intrinsic magnetic moment.

racemate. Optically active component which neutralizes optical effect of another component; also salt of racemic acid.

racemic acid. See dl-tartaric acid.

racemic substance. A mixture of dextro- and laevorotatory optically active isomers in equal amounts, the resulting mixture having no rotatory power. Such mixtures are prefixed by the letters dl.

racemization. Production of a racemic mixture from an optically active mixture.

racemose. In botany, resembling a bunch of grapes.

racking. Filling of filtered beer into barrels or other trade packings.

radial quantum number. Radial motion quantum number which is an integer for any permitted stationary condition of a particle moving under influence of a central field.

radiant energy. Energy consisting of electromagnetic waves, such as light or heat.

radiant intensity. Radiant power per unit solid angle in any direction from a source.

radiant power. Amount of energy emitted per second.

radiation. Emission of energy as light, heat, etc.; the transfer of energy thru space by electromagnetic waves.

radiation, annihilation. See annihilation radiation.

radiation, intensity of. See intensity of radiation.

radiation, supersonic. See supersonic radiation.

radiative equilibrium. Absorption and emission of radiant energy at same rate at constant temperature.

radical. A group of elements having an unsatisfied valence either polar or covalent and acting as a single element in a chemical reaction, e.g. CH_3—, NH_4^+; in mathematics, a root.

radical, free. See free radical.

radioactivity. A property exhibited by a group of elements, including uranium, thorium, radium and actinium, of emitting rays of unusual penetrating power, capable of ionising gases and exciting phosphorescence in certain substances, a process proceeding spontaneously and independent of external conditions, resulting in the disintegration of the atom. The α, β, and γ rays emitted are respectively helium nuclei, electrons, and extremely short electromagnetic waves.

radio-frequency. Pertaining to the high frequency used in radio waves, i.e. 40,000 to 30,000,000 vibrations per second.

radiogenic. Formed by radioactivity.

radiogram (radiograph). X-ray pattern formed by crystal diffraction.

radiology. The science of the diagnostic and therapeutic application of radium and radiant energy, including roentgen, ultra-violet, luminous and infra-red rays.

radiometer, Crooke's. A device consisting of an evacuated bulb within which is mounted a "paddle wheel" of four mica vanes attached to a delicately pivoted vertical axis, the vanes being blackened on one side. The "paddle wheel" rotates when exposed to radiation such as light or heat.

radiometry. The detection and measurement of radiant energy by converting it into mechanical energy.

radium. Ra; at. wt. 226.05; silv. wh. met.; s.g. 5? m.p. 960; b.p. 1140; d. with evolution of H_2; a radioactive element.

radium bromide. $RaBr_2$; m.w. 385.80; monocl. col.-yelsh.; s.g. 5.79; m.p. 728; s.w.; s.al.

radium carbonate. $RaCO_3$; m.w. 285.97; wh. or sl. brnsh.; i.w.

radium chloride. $RaCl_2$; m.w. 296.88; monocl. col.-yelsh.; s.g. 4.91; m.p. 1000; s.w.; s.al.

radium emanation. See radon.

radium sulfate. $RaSO_4$; m.w. 322.03; col.; i.w.

radius. Straight line from center of circle or sphere to circumference or surface; also, the length of such a line.

radius of gyration. Distance from the axis of rotation at which the total mass of a body might be concentrated without changing its moment of inertia.

radon (niton; radium emanation). Rn; at. wt. 222; col. gas., opaque cr.; s.g. 9.73 g/l; liq. 4.4^{-62}; solid 4; m.p. −71; b.p. −61.8; s.w.; a radioactive gas liberated from radium; heaviest of the inert gases.

raffia. A straw-like fiber obtained by stripping the bast from the leaf of the palm.

raffinose. $C_{18}H_{32}O_{16}\cdot 5H_2O$; m.w. 594.33; need. f.w.; m.p. anh. 118-9; s.w.; s.al.

raisin seed oil. See oil, grape seed.

Raman effect. Feeble new lines of different frequencies in the spectrum of a beam of monochromatic light passing thru a dust free substance, each different molecular species giving its own characteristic Raman spectrum.

ramie (rhea rámie, Chinese grass). Fiber of boehmeria genus; used for mats, rope, etc.

ramose. Branching, having lateral divisions, ramified.

Ramsaver effect. Absorption of slow-moving electrons by interposed substances.

rancidity. Development of unpleasant odor or taste in fats and oils.

Raney nickel. Nickel hydride or composition containing same used in hydrogenating certain organic compounds without using additional hydrogen.

Rankine cycle. Thermodynamic engine cycle where isothermal compression is continued until original volume is reached when the cycle is completed by increased pressure at same volume.

Rankine (R.). The name of a temperature scale, where temperatures are equal to degrees Fahrenheit plus 460.

Raoult's law (vapor pressure lowering). The fractional decrease of vapor pressure of a solution, as compared with vapor pressure of pure solvent, is equal to the mol fraction of solute in the solution.

rape oil. See oil, rapeseed.

rapeseed oil. See oil, rapeseed.

raphia. See raffia.

rapidase. A standardized mixture of amylolytic and proteolytic enzymes; a desizing and degumming agent.

rare earths. The 15 metallic elements, many of which have not been isolated, or their naturally occurring earths which are included between lanthanum, atomic number 57, and lutecium, atomic number 71, inclusive; a term strictly applied, however, to those elements whose three outer energy levels are incomplete, i.e. cerium, at. no. 58, to lutecium, at. no. 71, inclusive.

rare gases. The helium series of gases, including helium, neon, argon, krypton, xenon and radon, the 0 group of the periodic table, completely inactive chemically.

Raschig rings. Gas absorption tower packing, consisting of cylindrical rings of same length as diameter with thinnest possible walls.

Raschit. Parachlormetacresol.

rasorite. The mineral, $Na_2B_4O_7\cdot 4H_2O$, a tetraborate of sodium.

raspite. A mineral, $PbO\cdot WO_3$; monocl., brnsh. yel.

ratio. Proportion; relative magnitudes of two values, e.g. 2 and 6 are said to be in the same ratio as 1 and 3.

rational function. Quotient of one polynomial by another, e.g.

$$\frac{P(x)}{Q(x)} = R(x).$$

rational index law. See Haüy law.

rational number. A quantity expressed in finite terms, or one of which the indicated root can be exactly extracted, e.g. 2, $5\frac{1}{4}$, $\sqrt{9}$, $\sqrt[3]{64}$.

rattlesnake root. See senega.

Rauzene. Synthetic alkyd resin.

Rauzene ester. Ester gum.

raw glaze. Ceramic glaze which requires no fritting.

ray, molecular. See molecular ray.

Rayleigh disc. A disc so constructed and placed that sound sets it at right angles to line of motion of particles in medium.

Rayleigh-Jeans law. A law expressing the relationship between spectral energy distribution of black-body radiation at an absolute temperature and wavelength.

Rayleigh law. At low values of maximum magnetic induction, hysteresis loss in a magnetic cycle varies directly with cube of induction.

Rayleigh line. Part of spectral line, in scattered radiation having same frequency as corresponding incident radiation, originating from ordinary or Rayleigh scattering.

Rayleigh scattering. Selective scattering of light by extremely small particles in air.

rayon. A generic term for filaments made from various solutions of modified cellulose by pressing or drawing the cellulose solution thru an orifice and solidifying it in the form of a filament.

rayon, acetate. Filaments composed of an acetic acid ester of cellulose which has been coagulated or solidified from its solution.

rayon, cellulose acetate. See rayon, acetate.

rayon, cuprammonium. Filaments composed of regenerated cellulose which has been coagulated or solidified from a solution of cellulose in ammoniacal copper oxide.

rayon, nitro (Chardonnet). Filaments composed of regenerated cellulose (denitrated cellulose) which has been coagulated or solidified from a solution of nitrated cellulose.

rayon, nitrocellulose. See rayon, nitro.

rayon staple. Rayon fibers of spinnable length manufactured directly or by cutting continuous filaments.

rayon, viscose. Filaments composed of regenerated cellulose which has been coagulated or solidified from a solution of cellulose xanthate.

Rayox. Titanium dioxide.

reactance. A component of resistance, in an alternating current circuit, not opposing current but tending to bring about a difference of phase between itself and the electromotive force.

reaction, bimolecular. Chemical change involving two species of molecules or ions.

reaction, chemical. An interaction of substances in which the identity of the materials involved is altered.

reaction of first order. Chemical reaction in which velocity of reaction at a given time depends only on the amount per unit volume of the reacting substance at that time, all other conditions remaining constant.

reaction of second order. Chemical reaction in which rate of reaction is proportional to the product of the concentrations of two reacting substances.

reaction, order of a. See order of a reaction.

reaction, oxidation-reduction. See oxidation-reduction reaction.

reaction path. See path, reaction.

reaction, protolytic. See protolysis.

reaction, termolecular. A reaction involving three molecular species, e.g. $2NO + O_2 \rightleftarrows 2NO_2$.

reaction, unimolecular. Reaction in which one molecule decomposes or rearranges itself internally.

reagent. A solution or substance used for testing purposes.

realgar. A mineral, AsS; monocl., red, yel.; sp.gr. 3.56; hardness 1.5-2.0.

rearrangement. A chemical change involving the migration within a molecule of a group or an atom other than hydrogen, differing from tautomerisms in being usually irreversible and occurring less readily.

Réaumur (°R.). Temperature scale on which °R equals 4/9 (°F. −32) and also equals 4/5 (°C.).

recalescence. Liberation of heat due to a rearrangement of structure during the cooling of ferrous metals.

ceptor. That part of a cell which anchors material to it.

ciprocal proportions, law of. The weights of two or more substances which separately react chemically with identical weights of a third are also the weights which react with each other, or simple multiples of them.

ciprocal viscosity. See rhe.

ciprocating motion. Back-and-forth motion, as compared with circular or rotatory motion.

ciprocity, principle of. Each general law in x-space (space-time dimensions) has an inverse image in the p-space (of momenta and energy).

claim. Rubber recovered from vulcanized rubber scrap.

coil electron. See Compton electron.

crystallization. Process of purification wherein a substance is dissolved in water or other solvent and then crystallized from it.

ctification. A process of distillation conducted so that the vapor from a still comes in contact with condensed vapor previously evolved in distillation resulting in a greater enrichment of the vapor with the more volatile constituents. See fractionation.

ctilinear. Term applied to a lens forming an image free from distortion, or applied to the image itself.

ed brass. A copper-zinc alloy, 85:15.

ed copper ore. See cuprite.

ed gum. See gum accroides.

ed lead. See lead, red.

ed oil. See oleic acid.

ed pepper. See capsicum.

ed prussiate of potash. See potassium ferricyanide.

ed toner. A pigment, paranitraniline red.

ed zinc ore. See zincite.

Redmanol. A synthetic tar-acid resin.

redox reaction. See oxidation-reduction reaction.

redruthite. See chalcocite.

reduced states. See corresponding states.

reducer. Volatile solvent used to lessen viscosity or consistency of a fluid such as paint.

reducing agent. An agent effecting the reduction (q.v.) of a substance; a substance capable of supplying electrons to another substance, hence capable of reducing it, e.g. stannous chloride or hydrogen.

reductase. An enzyme which catalyses reduction.

reduction. A chemical change involving loss of oxygen, or gain of hydrogen; a lowering of valence; in all cases, a chemical change involving a gain of electrons.

reduction capacity. The number of reducing equivalents contained in a mol of a reducing agent.

reduction test. Method of determining coloring strength of a pigment in which one part of pigment is mixed with 10 parts of standard pure zinc oxide and a minimum of refined linseed oil and compared with a similar mixture of a standard pigment, rubbing each out on a palette.

reflectance. Fraction of incident light reflected from a surface.

reflectance, apparent. The reflectance which a perfectly diffusing surface would require in order to yield the same brightness as a sample under the same conditions of illumination and viewing.

reflection coefficient (reflectivity; reflection factor). Ratio of light reflected from a surface to the total incident light.

reflection factor. See reflection coefficient.

reflectivity. See reflection coefficient.

reflux condenser. A condenser which continuously returns the condensed vapor to the still.

refluxing. The continuous return of condensed vapor to the boiling liquid, by the use of suitable apparatus.

refraction, atomic. See atomic refraction.

refraction, electric double. See Kerr effect.

refraction, index of. See index of refraction.

refraction, molecular. See molecular refraction.

refractive index. See index of refraction.

refractivity. The index of refraction minus 1.

refractivity intercept. Relation between refractive index and density of liquids.

refractivity, specific. See specific refractivity.

refractometer. An instrument for determining index of refraction.

refractory. Any hard material not readily affected by heat; difficultly fusible.

refrangible. Capable of being bent in passing into a different medium, refractible, e.g. ordinary light.

regain. See conditioning.

regelation. Resolidification upon release of pressure of a fluid previously formed by the application of pressure to a solid.

Regulus metal. Partly smelted ore or partly refined metal.

Reichert Meissl value. Number of cc. of N/10 caustic potash required to neutralize the volatile acids liberated from 5 grams of fat under the proper conditions.

Reichert-Wollny value. See Reichert Meissl value.

reinforcing agent. Material which imparts toughness and greater resistance to wear in rubber, e.g. carbon black.

relative humidity. The ratio of the quantity of water vapor present in the air to the quantity which would saturate it at the existing temperature.

relative solvation. Degree of solvation divided by molecular weight.

relative valency effect. Other things being equal, a metal of lower valency is more likely to dissolve one of higher valency than vice versa.

relaxation. Decrease of stress at constant length.

relaxation force. Increased frictional force produced by difference of charge between an ionic cloud and its central ion.

relaxation time. Ratio of viscosity to rigidity.

relay. A very low power device used to close or open a circuit of relatively large current, and which may be electromagnetic, photoelectric, thermostatic, etc., in nature; used where the effect of a feeble impulse must control apparatus of much larger power, as in telephony, thermostatic control, etc.

reluctance. Resistance of a magnetized body to a magnetic flux.

reluctance, specific. See reluctivity.

reluctivity (specific reluctance). The reciprocal of magnetic permeability (q.v.).

remanence. Magnetic induction remaining in a magnetic circuit after removal of magnetizing force.

rendering. Process of separating fats from protein connective tissue and other water insoluble materials by treating small pieces of animal matter with hot water or steam.

rennet (rennin). The milk-coagulating enzyme of the stomach, possibly identical with pepsin, which possesses all its properties.

rennin. See rennet.

Rentschlerizing. Sterilization by means of a special ultra-violet lamp (Sterilamp).

replacement, double. See decomposition, double.

replacement, simple. See simple replacement.

resacetophenone (2, 4-dihydroxyacetophenone). $CH_3COC_6H_3(OH)_2$; m.w. 152.06; need.; m.p. 147; i.w.; s.al.

resacetophenone, 4-methyl ether. See peonol.

Resenoplast. A synthetic tar-acid resin.

reserve cellulose. Lichenin.

residual current (limiting current). Small current which flows thru a cell before the decomposition voltage is reached.

residual stress. Stress remaining in a solid after removal of external forces.

residuum (mazout). Thick viscous residue obtained upon normal distillation of volatile fractions of crude petroleum.

resilience. Energy absorbed by a material as it is brought to its breaking point.

resilience, elastic. See elastic resilience.

resin. A semisolid or solid, complex, amorphous mixture of organic compounds with no definite melting point and no tendency to crystallize. Resins may be of vegetable origin, animal origin (e.g. shellac) or synthetic. Resins are insoluble in water, distinct therein from gums.

resin, A-stage. See A-stage resin.

resin, acrylate. See acrylate resin.

resin, aldehyde. Synthetic resin made by treatment of an aldehyde with caustic soda or other condensing agent.

resin, alkyd. See alkyd resin.

resin, B-stage. See B-stage resin.

resin, benzofurane. See coumarone-indene resin.

resin, C-stage. See C-stage resin.

resin, convertible. A resin capable of transition to an insoluble, infusible form.

resin, copal. See copal resin.

resin, coumarone-indene. See coumarone-indene.

resin, Dura. See Dura resin.

resin, element convertible. See element convertible resin.

resin, fossil. See amber.

resin, guaiac. See gum, guaiac.

resin, hard lac. See sclerolac.

resin, modified. Synthetic resin modified with oil, natural resins or gums.

resin, molding. See molding resin.

resin, natural. See resin.

resin, Nelio. See Nelio resin.

resin, non-convertible. A resin incapable of change to an insoluble form.

resin, oak moss. See oak moss resin.

resin, oil-reactive. See resin, oil-soluble.

resin, oil-soluble (oil-reactive resin). A product which at moderate temperatures will dissolve in, disperse in, or react with drying oils to give a homogeneous film of modified characteristics.

resin of ipomea. See scammony resin.

resin, petroleum. See petroleum resin.

resin, phenolic. See phenolic resin.

resin, pine. See gum rosin.

resin podophyllum. See podophyllin.

resin, polycrylic. See polycrylic resin.

resin, scammony. See scammony resin.

resin, synthetic. See synthetic resin.

resin, tar-acid. See tar-acid resin.

resin, thermoplastic. See thermoplastic resin.

resin, thermosetting. See thermosetting resin.

resin, urea. See urea resin.

resin, vinyl. See vinyl resin.

resin, yellow. See gum rosin.

resinate (abietate). A salt of rosin or abietic acid, e.g. lead resinate.

Resinit. A synthetic tar-acid resin.

resinogen. A potential resin forming group.

resinoid. Class name applied to thermosetting resins; temporary thermoplastics; also the final cured resins.

Resinole. A synthetic tar-acid resin.

resinophore groups. Groups which tend to cause resinification when the compounds in which they are contained are heated above the melting point, e.g. —N=C—N—, —N=P—N, —C—C—CO—, or —C=C—C=C—.

Resinox. A synthetic tar-acid resin.

resist. Material applied to prevent printing or dyeing of certain parts of a textile, or applied to metals to prevent etching of certain parts, as in photoengraving.

resistance. An electrical property which is a constant for a given conductor, depending on the material, its dimensions and temperature and which determines current flow for a given potential difference. Resistance is expressed in ohms, a conductor having one ohm resistance when unit potential difference produces a flow of unit current.

resistance, insulation. See insulation resistance.

resistance, specific. See specific resistance.

resistance, surface. See surface resistance.

resistance, volume. See volume resistance.

resistivity. See specific resistance.

resistivity, surface. See surface resistivity.

resistivity, volume. See volume resistivity.

Resistox. An aldol-aniline anti-oxidant for rubber.

Resit. A synthetic tar-acid resin.

Resite. A C-stage (q.v.) phenol-aldehyde resin.

Resitol. A B-stage phenol-aldehyde resin.

reso-rubber. See rubber, plasto-.

resodiacetophenone (4, 6-diacetylresorcinol). $(CH_3CO)_2C_6H_2(OH)_2$; m.w. 194.08; wh. need.; m.p. 180; i.w.; s.al.

Resoglaz. A polystyrene resin, thermoplastic, available as a colorless translucent powder, of good resistance to acids, alkalies, and alcohols.

Resol. A potentially hardening A-stage phenol-aldehyde resin.

resolution. The separation of a racemic mixture into its optically active components; see forces, resolution of.

resolution of forces. See forces, resolution of.

resolving power. Ability of a microscope or telescope objective to reveal closely adjacent structural details or points as actually separate and distinct.

resonance. State of continuous and very rapid oscillation that exists in a molecule that has two alternative structures which have nearly the same energy content and a similar spatial arrangement; state in which orbital vibrations of the different electrons in a molecule are coupled together; in electricity condition when inductive reactance exactly balances capacitative reactance making the ohmic resistance the only opposition to flow of electric current in a circuit.

resonance state. State of excitation that produces resonance radiation.

resorcin. See resorcinol.

resorcin monoacetate (resorcinol acetate, acetyl resorcinol; euresol). A light yellow oil, s.w., used in medicine.

resorcinol (1, 3-benzenediol; resorcin). $C_6H_4(OH)_2$; m.w. 110.05; col. rhomb. tab. f.w. or ba; m.p. 110; b.p. 276.5; s.w.; s.al.

resorcinol acetate. See resorcin monoacetate.

resorcinol, 4-amyl- (1-n-amyl-2, 4-dihydroxybenzene). $CH_3(CH_2)_4C_6H_3(OH)_2$; m.w. 180.12; col.; m.p. 71.5-3.0; b.p. 168-70 °; s.w.; s.al.

resorcinol, 4-benzoyl-. See benzophenone, 2, 4-dihydroxy-.

resorcinol blue. See lacmoid.

resorcinol, 4-butyl- (1-N-butyl-2, 4-dihydroxybenzene). $CH_3(CH_2)_3C_6H_3(OH)_2$; m.w. 166.11; col.; m.p. 47-8; b.p. 196-200 °; s.w.; s.al.

resorcinol, 4-caproyl-. See capro-

phenone, 2, 4-dihydroxy-.

resorcinol, 4, 6-diacetyl-. See resodiacetophenone.

resorcinol, diethyl ether. See benzene, 1, 3-diethoxy-.

resorcinol, dihydro-. See 1, 3-cyclohexanedione.

resorcinol, diisoamyl ether. See benzene, 1, 3-diisoamoxy-.

resorcinol, 2, 4-dimethyl- (2, 4-dimethyl-1, 3-benzenediol; 2, 4-dihydroxy-m-xylene). $(CH_3)_2C_6H_3(OH)_2$; m.w. 138.08; need. by subl.; m.p. 149-50; s.w.; s.al.

resorcinol, 2, 5-dimethyl- (2, 5-dimethyl-1, 3-benzenediol; p-xylorcinol; β-orcinol; 2, 6-dihydroxy-p-xylene; betorcinol). $(CH_3)_2C_6H_2(OH)_2$; m.w. 138.08; tetrag. f.w. or bz.; m.p. 163; b.p. 277-80; s.w.; s.al.

resorcinol, 4, 5-dimethyl- (4, 5-dimethyl-1, 3-benzenediol; 3, 5-dihydroxy-o-xylene). $(CH_3)_2C_6H_2(OH)_2$; m.w. 138.08; need. f. bz., pr. $(+1H_2O)$ f.w.; m.p. $+1H_2O$ 115-7, anh. 136-7; s.w.; s.al.

resorcinol, 4, 6-dimethyl- (4, 6-dimethyl-1, 3-benzenediol; m-xylorcinol; 4, 6-dihydroxy-m-xylene). $(CH_3)_2C_6H_2(OH)_2$; m.w. 138.08; monocl. cr. f.w., chl. or bz.; m.p. 124.5-5; s.w.; s.al.

resorcinol, dimethyl ether. See benzene, 1, 3-dimethoxy-.

resorcinol, 2, 4-dinitro- (2, 4-dinitro-1, 3-benzenediol; v-dinitroresorcin). $(NO_2)_2C_6H_2(OH)_2$; m.w. 200.05; yel. leaf.; m.p. 147-8; s.w.; s.al.

resorcinol, dipropyl ether. See benzene, 1, 3-dipropoxy-.

resorcinol, dithio- (1, 3-benzenedithiol; m-phenylene dimercaptan). $C_6H_4(SH)_2$; m.w. 142.17; col. shiny cr.; m.p. 27; b.p. 243-5; i.w.; s.al.

resorcinol, 4-ethyl- (1, 3-dihydroxy-4-ethylbenzene). $C_2H_5C_6H_3(OH)_2$; m.w. 138.08; col. pr.; m.p. 98-9; b.p. 131 [15]; s.w.; s.al.

resorcinol, 4-hexyl- (1-n-hexyl-2, 4-dihydroxybenzene; caprokol). $CH_3(CH_2)_5C_6H_3(OH)_2$; m.w. 194.14; col. need.; m.p. 68-70; b.p. 178-80 [7]; s.al.

resorcinol, 4-isoamyl- (2, 4-dihydroxy-1-isoamylbenzene). $(CH_3)_2CH(CH_2)_2C_6H_3(OH)_2$; m.w. 180.12; col.; m.p. 61-2.5; b.p. 177-8 [6]; s.w.; s.al.

resorcinol, 4-isobutyl- (2, 4-dihydroxy-1-isobutylbenzene). $(CH_3)_2CHCH_2C_6H_3(OH)_2$; m.w. 166.11; col.; m.p. 63.5; b.p. 166-8 [6]; s.w.; s.al.

resorcinol, 4-isohexyl- (2, 4-dihydroxy-1-isohexylbenzene). $(CH_3)_2CH(CH_2)_3C_6H_3(OH)_2$; m.w. 194.14; col.; m.p. 70-1.5; b.p. 182-3 [6]; s.w.; s.al.

resorcinol, 4-isopropyl- (2, 4-dihydroxy-1-isopropylbenzene). $(CH_3)_2CHC_6H_3(OH)_2$; m.w. 152.09; col.; m.p. 105; b.p. 265-81; s.w.; s.al.

resorcinol, 2-methoxy- (pyrogallol 2-methyl ether). $CH_3OC_6H_3(OH)_2$; m.w. 140.06; cr.f.bz.; m.p. 85-7; b.p. 154-5 [24].

resorcinol, 5-methoxy- (phloroglucinol monomethyl ether). $CH_3OC_6H_3(OH)_2$; m.w. 140.06; tab.f.bz.; m.p. 78.81; b.p. 213 [16]; s.w.; s.al.

resorcinol, 2-methyl- (2-methyl-1, 3-benzenediol; 2, 6-dihydroxytoluene). $CH_3C_6H_3(OH)_2$; m.w. 124.06; col. need.; m.p. 116-21; b.p. 264; s.w.; s.al.

resorcinol, 4-methyl-. See cresorcinol.

resorcinol, 5-methyl-. See orcinol.

resorcinol, monoamyl ether. See phenol, m-amoxy-.

resorcinol, monobutyl ether. See phenol, m-butoxy-.

resorcinol, monoethyl ether. See phenol, m-ethoxy-.

resorcinol, monomethyl ether. See phenol, m-methoxy-.

resorcinol, monopropyl ether. See phenol, m-propoxy-.

resorcinolphthalein. See fluoresceln.

resorcinol, 4-propionyl-. See propiophenone, 2, 4-dihydroxy-.

resorcinol, 4-propyl- (2, 4-dihydroxy-1-propylbenzene). $CH_3(CH_2)_2C_6H_3(OH)_2$; m.w. 152.09; col. pr.f.bz.; m.p. 107-8; b.p. 172-4 [14-5]; s.w.; s.al.

resorcinol, 2-salicylyl-. See benzophenone, 2, 2′, 6-trihydroxy-.

resorcinol, 2, 4, 6-tribromo-. $Br_3C_6H(OH)_2$; m.w. 346.77; col. need. f.w.; m.p. 111; s.w.; s.al.

resorcinol, 2, 4, 6-trimethyl-. See mesorcinol.

resorcinol, 2, 4, 6-trinitro-. See styphnic acid.

β-resorcylaldehyde (2, 4-dihydroxybenzaldehyde; 2, 4-dihydroxybenzenecarbonal). $(HO)_2C_6H_3CHO$; m.w. 138.05; yel. need. f.w.; m.p. 135; b.p. 220-8 [22]; s.w.; s.al.

β-resorcylaldehyde, dimethyl ester. See benzaldehyde, 2, 4-dimethoxy-.

α-resorcylic acid (3, 5-dihydroxybenzoic acid; 3, 5-dihydroxybenzenecarboxylic acid). $(HO)_2C_6H_3COOH \cdot 1\frac{1}{2}H_2O$; m.w. 181.07; col. pr.; m.p. 232-3, anh. 237; s.w.; s.al.

β-resorcylic acid (2, 4-dihydroxybenzoic acid; 2, 4-dihydroxybenzenecarboxylic acid). $(HO)_2C_6H_3COOH \cdot 3H_2O$; m.w. 208.09; col. need. f.et.; m.p. *ca.* 213; s.al.

γ-resorcylic acid (2, 6-dihydroxybenzoic acid; 2, 6-dihydroxybenzenecarboxylic acid). $(HO)_2C_6H_3COOH \cdot 1\frac{1}{2}H_2O$; m.w. 181.07; col. need. f.w.; s.w.

respirator. Face mask worn for protection against dust and fumes.

retarder. Fluid added to paints, lacquers, etc. to slow down evaporation rate of their solvents.

Retardox. An aldehyde-amine condensation product.

retene (7-isopropyl-1-methylphenanthrene). $C_{18}H_{18}$; m.w. 234.14; leaf. f.al.; m.p. 98.5; b.p. 394; i.w.; s.al.

retentivity. Property measured by residual induction, corresponding to the saturation induction.

reticule (reticle). The set of cross hairs in the focal plane of an optical device.

retine (methyl isopropyl phenanthrene). $C_{18}H_{18}$; m.w. 234.15; occurring with pyrene in coal-tar distillates; used in dyeing.

retinol. See oil, rosin.

retort. Apparatus used for distilling metals, alloys and ores; in the laboratory, a globular glass vessel with an extended side tube used in distilling corrosive liquids.

retrograde rays. Corpuscular rays, similar to positive rays, magnetically deflectable, which move away from cathode, consisting of particles of atomic size.

retting. Soaking and maceration of flax.

Revatol S. Sodium metanitrobenzene sulfonate; kier boiling assistant for vat dye materials.

reverberatory furnace. Furnace constructed to allow the fuel flame to pass over the material lying on a bed.

reversible reaction. A chemical change in which the products of reaction may be made to produce again the original substances of reaction, by changing the conditions of temperature, pressure and concentration; an equilibrium condition in which the extent of reaction in either direction is determined by pressure and temperature.

Revertex. Natural rubber latex concentrated on plantation by special evaporating process, containing about 75% dry solids.

reyn. A measure of viscosity equal to 69×10^{-6} centipoises.

Reynolds law. The gradient of the head of a mobile liquid in a straight tube is proportional to speed of flow up to the critical velocity. Above the latter it is proportional to a higher power of the speed.

Rezyl. Synthetic alkyd resin; a modified glycerolphthalate resin used in coatings.

rH. Logarithm of reciprocal of the pressure of reducing (atomic) hydrogen. The higher the value of rH, the greater is the oxidizing power of the solution.

rhamnitol (1, 2, 3, 4, 5-hexanepentol [one form]; rhamnite). $CH_3(CHOH)_4CH_2OH$; m.w. 166.11; tricl. pr.; m.p. 121; s.w.; s.al.

β-rhamnose. $C_6H_{12}O_5 \cdot H_2O$; m.w. 182.11; col. monocl. f.w.; m.p. 126; s.w.; s.al.

rhatany. See rhatany root.

rhatany root (krameria). Dried root of krameria trianda and k. argenta, used as an astringent and in tanning.

rhe (reciprocal viscosity). Absolute unit of fluidity or reciprocal of unit of viscosity in centipoises.

rhea ramie. See ramie.

rheadine (rhoeadine). $C_{21}H_{21}NO_6$; m.w. 383.17; sm. pr.; s.w.; s.al.

rhenium. Re; at. wt. 186.31; hex. met. lust.; s.g. 20.53; m.p. 3440; a metallic element resembling manganese.

rhenium chloride, tetra-. $ReCl_4$; m.w. 328.14; blk.; b.p. 500; s.w. d.

rhenium chloride, tri-. $ReCl_3$; m.w. 292.68; hex. dk. red.; b.p. >550; s.w.

rhenium fluoride, hexa-. ReF_6; m.w. 300.31; pa. yel.; m.p. 25.6; s.w. d.

rhenium oxide, di-. ReO_2; m.w. 218.31; blk.; i.w.

rhenium chloride, hexa-. $ReCl_6$; m.w. 399.05; yelsh. red.; b.p. <40; s.w. d.

rhenium oxide, hept-. Re_2O_7; m.w. 484.62; br.-yel. pl. or powd.; s.g. 8.2; m.p. *ca.* 220; b.p. 450 subl.; s.w.; s.al.

rhenium oxide, per-. ReO_3; m.w. 500.62; wh.; s.g. 8.4; m.p. 150; s.w.

rheological curve. Curve of rate of shear plotted against shearing stress.

rheology. The science concerned with the deformation and flow of matter.

rheostat. An adjustable resistance utilizing a sliding contact, a switch contacting a series of tapping points, a pack of carbon plates under variable pressure, or variable area or distance between electrodes in an electrolyte.

rheum emodin. See emodin.

rhigolene (cymogene). A pentane-isopentane mixture, a petroleum fraction boiling from 0-18° C.

rhizome. A rootstock; a thickened horizontal rooting stem, from which branches new plants at various points, as in iris, ginger, ferns, etc.

rho ratio. See Poisson ratio.

rhodanate. See sulfocyanate.

rhodanide. See sulfocyanide.

rhodinal. See citronellal.

rhodinol (3, 7-dimethyl-6-octen-1-ol [?]). $C_{10}H_{19}OH$; m.w. 156.16; col. oily liq.; b.p. 113-4 [15].

rhodium. Rh; at. wt. 102.91; cub. gray-wh.; s.g. 12.5; m.p. 1985±15; b.p. >2500; i.w.; a metallic element belonging to the platinum family.

rhodium cesium sulfate. $Rh_2(SO_4)_3 \cdot Cs_2SO_4 \cdot 24H_2O$; m.w. 1288.05; yel. oct.; m.p. 110-111; s.w.

rhodium chloride. $RhCl_3$; m.w. 209.28; br. red. powd. deliq.; m.p. d. 450-500; b.p. subl. 800; i.w.

rhodium chloride. $RhCl_3 \cdot xH_2O$; dk. red.; s.w.; s.al.

rhodium fluoride, tri-. RhF_3; m.w. 159.91; rhomb. red.; s.g. 5.38; b.p. >600 subl.; i.w.

rhodium hydrosulfide. $Rh(SH)_3$; m.w. 202.11; blk.; i.w.

rhodium hydroxide, tetra-. $Rh(OH)_4$; m.w. 170.94; olive grn.; i.w.

rhodium hydroxide, tri-. $Rh(OH)_3$; m.w. 153.93; yel. gel.; i.w.

rhodium nitrate. $Rh(NO_3)_3$; m.w. 288.93; br.-yel.; s.w.; i.al.

rhodium nitrate. $Rh(NO_3)_3 \cdot 2H_2O$; m.w. 324.97; red. deliq.; s.w.; i.al.

rhodium oil. See oil, rhodium.

rhodium oxide, di-. RhO_2; m.w. 134.91; br.; i.w.

rhodium oxide, mon-. RhO; m.w. 118.91; gray; i.w.

rhodium oxide, sesqui-. Rh_2O_3; m.w. 253.82; gray cr. or amor.; m.p. d. 1100-1150; i.w.

rhodium potassium sulfate. $RhK(SO_4)_2 \cdot 12H_2O$; m.w. 550.32; yel. cub.; s.g. 2.23; s.w.

rhodium sulfate. $Rh_2(SO_4)_3 \cdot 4H_2O$; m.w. 566.06; red.; s.w.

rhodium sulfate. $Rh_2(SO_4)_3 \cdot 12H_2O$; m.w. 710.19; lt. yel. cr.; s.w.; i.al.

rhodium sulfate. $Rh_2(SO_4)_3 \cdot 15H_2O$; m.w. 764.23; pa. yel. cr.; s.w.; i.al.

rhodium sulfide, mono-. RhS; m.w. 134.97; gray-blk. cr.; i.w.

rhodium sulfide, sesqui-. Rh_2S_3; m.w. 302.00; blk.; i.w.

rhodium sulfite. $Rh_2(SO_3)_3 \cdot 6H_2O$; m.w. 554.09; yel. cr.; s.w.; i.al.

rhodocrosite (dialogite). A mineral, $MnCO_3$; hex. (trig.), red, pink, gray, br.; rar. col.; sp.gr. 3.30-3.76; hardness 3.5-4.5.

rhodonite (fowlerite). A mineral, $MnO \cdot SiO_2$; tricl., red, pink, yelsh., grnsh., brnsh., blk.; sp.gr. 3.40-3.68; hardness 5.5-6.5.

rhoeadine. See rheadine.

RHoflax. Mixture of alkyl cellulose ethers; water soluble thickener.

rhomboid. Quadrilateral figure whose opposite sides and angles are equal, but which is neither equilateral nor equiangular.

rhombus. An oblique-angle equilateral parallelogram.

RHonite. Aqueous solution of urea formaldehyde resin.

RHoplex. Synthetic urea resin.

riboflavin. See vitamin B_2.

Rice's bromine solution. A solution used for the quantitative analysis of urea, consisting of 12.5% of bromine and sodium bromide in water.

Richard rule. Ratio of molar heat of fusion to melting point at absolute temperature is the same for various solids.

ricin. A highly toxic albumin occurring in castor beans.

ricinine. $C_8H_8N_2O_2$; m.w. 164.08; pr. or tab. f.al. or w.; s.w.; s.al.

ricinoleic acid (12-hydroxy-9-octadecenoic acid [one form]; ricinolic acid). $CH_3(CH_2)_5CHOHCH_2CH:CH(CH_2)_7COOH$; m.w. 298.27; col. liq. or cr. mass; m.p. 17; b.p. 250 [15]; i.w.; s.al.

ricinoleic acid, acetylbutyl-. $C_{18}H_{33}O_2CH_2COC_4H_9$; m.w. 397.34; yel. oily liq.; sp.gr. 0.94; b.p. 220-235 [2-3]; i.w.; s.al.; a plasticizer, emulsifier, lubricator, and detergent.

ricinoleic acid, butyl ester (butyl ricinoleate; butyl 12-hydroxy-9-octadecenoate [one form]). $C_{18}H_{33}O_2C_4H_9$; m.w. 354.33; liq.; b.p. 275 [15]; i.w.

ricinoleic acid, isobutyl ester (isobutyl ricinoleate; β-methylpropyl 12-hydroxy-9-octadecenoate [one form]). $C_{22}H_{43}O_3$; m.w. 354.33; liq.; b.p. 262 [9]; i.w.

rider. A small movable weight placed on the beam of an analytical balance used to obtain the smallest readings.

Riegler's test. A test for nitrous acid using sodium naphthionate and β-naphthol.

Riemannian space. Space of n dimensions in which the distance between neighboring points only is defined a priori.

Righi-Leduc effect. The temperature difference between two edges of a metal strip, heated at one end, when its plane is placed perpendicularly across a magnetic field.

rigidity modulus. See shear modulus.

rimming steel. See steel, rimming.

rimous. Cracked; containing fissures.

ring. See chain, closed.

Ritz principle. Every wave number in spectrum of a substance can be expressed as a difference between two of a much smaller series of terms characteristic of the substance.

road oil. See oil, road.

road tar. See tar, road.

roasting ores. Conversion of sulfide ores to oxides by heating in the presence of air.

Rochelle salt. See potassium sodium

tartrate.

rock candy. Cane sugar in the form of large transparent hydrated crystals.

rock crystal. Pure colorless quartz.

rock mantle. The loose material consisting of clay, sand, gravel, and broken rock found beneath vegetation.

rock oil. See petroleum.

rock salt. See halite (sodium chloride).

rock wool. An insulating material made from argillaceous limestone.

Rockite. A synthetic tar-acid resin used in molding and laminating.

Rockwell test. Test for hardness in which a hardened steel ball or diamond cone is pressed against material tested.

rodinal. See phenol, p-amino-.

roentgen. See roentgen unit.

Roentgen rays. See x-rays.

roentgen unit (r-unit). The amount of ionization which will create one electrostatic unit of charge per cc. in air at normal temperature and pressure, when all secondary electrons are captured.

roentgenization. Discoloration of glass on continued exposure to x-rays.

Roget spiral. A helical wire which contracts while conducting a current.

roll sulfur. See sulfur, roll.

rolled gold (filled gold). Material consisting of a core or base of inexpensive alloy coated with a thin layer of a gold alloy.

roller mill. Mill with two or more closely set heavy rollers, revolving oppositely, used for grinding pigments into liquids.

Rongalite C. See Discolite.

root, extraneous. Root which will satisfy a give. equation only when the sign opposite to the sign of the principal root is used in check.

ropiness. Stringy quality of beer, milk, bread, etc., due to bacterial infection.

rosaniline (bis-p-aminophenyl-4-amino-m-tolylcarbinol). $H_2NC_7H_6(H_2NC_6H_4)_2COH$; m.w. 319.19; col. need. f.w.; s.w.; s.al.

rosanilines. Aminated bases of fuchsine or magenta dyes.

roscoelite. Variety of vanadium mica; sp.gr. 2.92-2.94; dk. grn.-br.

rose oil, synthetic. See oil, rose, synthetic.

roselle fiber. Jute-like, Malayian fiber.

rosemary oil. See oil, rosemary.

Rose's metal. An alloy of bismuth, lead, tin (50:27.1:22.9), a fusible metal.

rosin. See gum rosin.

rosin, common. See gum rosin.

rosin essence. That portion of rosin distilled below 360° C.

rosin gradings. Rosin sold in following grades, which are indicative of color: B, C, D, E, F, G, H, I, J, K, L, M, N, W-G (window glass), W-W (water-white). B is the darkest and W-W the lighest shade.

rosin, gum. See gum rosin.

rosin oil. See oil, rosin.

rosin size. Soda rosin soap containing varying amounts of free rosin, used for sizing paper, etc.

rosin soap. Soap made from rosin, or soap to which rosin has been added; used for laundering purposes.

rosin spirit (pinoline). Mixture of hydrocarbons and rosin acids forming the destructive-distillate fraction of rosin below 150° C.

rosin, wood (colophony). An amorphous solid extracted from long leaf pine wood; sp.gr. approx. 1.08; m.p. 70-85; having the same uses as gum rosin.

rosinduline (5, 8-dihydro-8-imino-5-phenylbenzo [b] phenazine). $HN{:}C_{10}H_4{:}NC_6H_4NC_6H_5$; m.w. 321.14; br. leaf. f.al. or need. f.et.; m.p. 199; i.w.; s.al.

rosinol. See oil, rosin.

rosolic acid. See aurin.

rota-meters. Meters measuring rate of flow of liquids or gases.

rotary power. See rotatory power.

rotation, free. See free rotation.

rotation photograph. Photograph taken of a fragment of a crystal in a narrow beam of monochromatic radiation, while it is turned around an axis perpendicular to the beam while the exposure is being made; used in crystal analysis.

rotation, specific. See specific rotation

rotation spectra. Molecular spectra occurring in the far infra-red region of the spectrum.

rotational. See circuital.

rotational analysis. Analysis of a molecular rotation spectra.

rotational isomer. See isomer, rotational.

rotational state. Quantum state or energy level of molecular rotation which determines molecular rotation spectral lines.

rotatory power. The number of degrees a rotatory solution or other medium will rotate a beam of polarized light per unit length of medium traversed.

rotatory power, atomic. Specific rotatory power multiplied by atomic weight.

rotatory power, molar. Specific rotatory power multiplied by molecular weight.

rotatory power, specific. Rotatory power divided by density.

rotenone. $C_{23}H_{22}O_6$; m.w. 394.17; hex. pl.f.al. or et., need. f. bz., chl., or CCl_4; m.p. 163; sp.gr. 1.27; i.w.; a substance poisonous to insects but not to human beings; used in fly sprays, flea powders.

rotten stone. See tripoli.

rouge. See ferric oxide.

rouge, polishing. See ferric oxide.

rough stuff. See grog.

roving. An assemblage of carded or combed fibers drawn into a single strand, essentially without a twist; an intermediate stage between sliver and yarn.

roving, asbestos. An assemblage of chrysotile asbestos and other fibers rubbed into a single strand without twist.

roving, reinforced asbestos. Asbestos roving containing a core of other fibers.

Rowland law. See Bosanquet law.

rowlandite. A natural yttrium silicate, $2Yt_2O_3 \cdot 3SiO_2$.

rub-out method. Method for determining oil absorption of pigments.

rubber. See caoutchouc.

rubber, alternative (co-rubber). Synthetic rubber made from butadiene or its derivatives, e.g. Buna.

rubber, cold-cured. Thin rubber vulcanized by treatment with a solution of sulfur chloride, or by exposure to its vapors.

rubber, halo (halogeno-rubber). Synthetic rubber containing combined chlorine, e.g. Neoprene.

rubber, India. See caoutchouc.

rubber, liquid. See latex.

rubber, mineral. See mineral rubber.

rubber, plasto- (reso-rubber). Synthetic rubbers including vinyl polymers and other unvulcanizable, thermoplastic polymers made from hydrocarbons.

rubber plating. Coating of rubber on metals by electrodeposition or ionic coagulation.

rubber, reso-. See rubber, plasto-.

rubber seed oil. See oil, rubber seed.

rubber, semi-hard. Any rubber compound containing more than 25% combined sulfur based on weight of the rubber.

rubber, synthetic. See synthetic rubber.

rubber, thio-. Synthetic rubber containing combined sulfur, e.g. Thiokol.

rubber, true hard (Ebonite). Rubber compound containing 47% combined sulfur.

rubbing oil. See oil, rubbing.

rubefacient. Substance which produces a temporary reddening of the skin.

rubidium. Rb; at. wt. 85.48; soft, silv.-wh. met.; s.g. 1.532, liq. 1.475 $^{38.5}$; m.p. 38.5; b.p. 700; s.al.; a metallic element of the potassium group.

rubidium acetate. $RbC_2H_3O_2$; m.w. 144.46; col. nacreous leaf; s.w.

rubidium bromate. $RbBrO_3$; m.w. 213.36; s.g. 3.68; m.p. 430; s.w.

rubidium bromide. RbBr; m.w. 165.36; cub. col.; s.g. 3.35, liq. 2.79 ^{730}; m.p. 682; b.p. 1340; s.w.; i.al.

rubidium bromide, tri-. $RbBr_3$; m.w. 325.19; rhomb.; m.p. d. 140.

rubidium bromoiodide, di-. $RbIBr_2$; m.w. 372.19; rhomb.; m.p. 225; b.p. d. 265.

rubidium carbonate. Rb_2CO_3; m.w. 230.88; col. cr., deliq.; m.p. 837; b.p. d. 740; s.w.; s.al.

rubidium carbonate, acid. $RbHCO_3$; m.w. 146.45; rhomb.; m.p. d. 175; s.w.; s.al.

rubidium chlorate. $RbClO_3$; m.w. 168.90; trim.; s.g. 3.19; s.w.

rubidium chlorate, per-. $RbClO_4$; m.w. 184.90; rhomb.; s.g. 2.9; s.w.; i.al.

rubidium chloride. RbCl; m.w. 120.90; cub. col.; s.g. 2.76; liq. 2.088 ^{730}; m.p. 715; b.p. 1390; s.w.; s.al.

rubidium chlorobromide, di-. $RbBrCl_2$; m.w. 236.27; rhomb.; m.p. d. 110.

rubidium chlorobromoiodide. RbIClBr; m.w. 327.73; rhomb.; m.p. 205; b.p. d. begins 200.

rubidium chlorodibromide. $RbBr_2Cl$; m.w. 280.73; rhomb.; m.p. 76.

rubidium chloroiodide, di-. $RbICl_2$; m.w. 283.27; rhomb.; m.p. 180-200; b.p. d. 265.

rubidium chloroplatinate. Rb_2PtCl_6; m.w. 578.85; cub. yel.; s.g. 3.94 $^{17.5}$; s.w.; i.al.

rubidium chromate. Rb_2CrO_4; m.w. 286.89; rhomb. yel.; s.g. 3.518; s.w.

rubidium chromate, di-. $Rb_2Cr_2O_7$; m.w. 386.90; tricl. or monocl.; s.w.

rubidium fluoride. RbF; m.w. 104.44; col.; s.g. liq. 2.88 ^{820}; m.p. 760; b.p. 1410; s.w.; i.al.

rubidium fluosilicate. Rb_2SiF_6; m.w. 312.94; cub. oct.; s.g. 3.332; s.w.; i.al.

rubidium fluosulfonate. $RbFSO_3$; m.w. 184.50; need.; m.p. 304.

rubidium hydride. RbH; m.w. 86.45; col. need.; s.g. 2.0; m.p. d. 300.

rubidium hydronitrate. $RbNO_3 \cdot HNO_3$; m.w. 210.46; tetr.; m.p. 62.

rubidium hydronitrate, di-. $RbNO_3 \cdot 2HNO_3$; m.w. 273.48; col. need.; m.p. 45.

rubidium hydroxide. RbOH; m.w. 102.45; gray-wh. deliq.; s.g. 3.203 ^{11}; m.p. 300; s.w.; s.al.

rubidium iodate. $RbIO_3$; m.w. 230.36; monocl. or cub.; s.g. 4.33 $^{19.5}$; s.w.

rubidium iodate, per-. $RbIO_4$; m.w. 276.36; tetr.; s.g. 3.918 ^{16}; s.w.

rubidium iodide. RbI; m.w. 212.36; cub. col.; s.g. 3.55; liq. 2.87 ^{825}; m.p. 642; b.p. 1300; s.w.

rubidium iodide, tri-. RbI_3; m.w. 466.20; rhomb. blk.; m.p. 190; s.w.

rubidium manganate, per-. $RbMnO_4$; m.w. 204.37; cryst.; s.g. 3.235 $^{16.4}$; s.w.

rubidium nitrate. $RbNO_3$; m.w. 147.45; hex. cub. rhomb. or tricl. col.; s.g. 3.11, liq. 2.395 ^{400}; m.p. tr.-cub. 161.4; m.p. 310; b.p. tr. rhomb. 219; s.w.

rubidium oxide, di-(per). Rb_2O_2; m.w. 202.88; cub. yel.; s.g. 3.65°; m.p. 600; s.w. d. to $RbOH + H_2O_2$.

rubidium oxide, mon-. Rb_2O; m.w. 186.88; cub. col.-yel.; s.g. 3.72; m.p. d. 400; s.w. d.

rubidium oxide, tetr-. Rb_2O_4; m.w. 234.88; yel.; s.g. 3.05°; m.p. 280; s.w. d. to $RbOH + H_2O_2 + O_2$.

rubidium oxide, tri-. Rb_2O_3; m.w. 218.88; blk.; s.g. 3.53; m.p. <500; s.w. d.

rubidium sulfate. Rb_2SO_4; m.w. 266.94; rhomb. hex. col.; s.g. 3.613; liq. 2.53 ^{1100}; m.p. 1060; tr. 653; s.w.

rubidium sulfate, acid. $RbHSO_4$; m.w. 182.51; rhomb.; s.g. 2.892 ^{16}; m.p. < red heat.

rubidium sulfide. Rb_2S; m.w. 202.94; col.; s.g. 2.912; s.w.

rubidium sulfide. $Rb_2S \cdot 4H_2O$; m.w. 275.00; cr., deliq.; s.w.

rubidium sulfide, di-. Rb_2S_2; m.w. 235.00; dk. red; m.p. 420; b.p. volat. >850.

rubidium sulfide, hexa-. Rb_2S_6; m.w. 363.24; brown-red.; m.p. 201.

rubidium sulfide, penta-. Rb_2S_5; m.w. 331.18; rhomb. red., deliq.; s.g. 2.618 ^{15}; m.p. 225; s. 70% al.

rubidium sulfide, tri-. Rb_2S_3; m.w. 267.06; redsh. yel.; m.p. 213.

rubidium sulfoniodide, tetra-. $RbI \cdot 4SO_2$; m.w. 468.60; lemon yel.; m.p. 13.5.

rubidium dl-tartrate, acid. $RbC_4H_5O_6$; m.w. 234.48; trim. pr.; s.g. 2.282; s.w.

rubin number. Percentage concentration of a protective agent that is just sufficient to prevent flocculation of Congo rubin solution.

rubrophen. Dihydroxytrimethoxyoxotriphenyl methane.

ruby. See corundum.

ruby silver ore. See proustite.

rue oil. See oil, rue.

rufigallic acid (1, 2, 3, 5, 6, 7-hexahydroxyanthraquinone; rufigallol). $C_{14}H_2O_2(OH)_6$; m.w. 304.06; or. red. cr.; i.w.

rufiopin (1, 2, 5, 6-tetrahydroxyanthraquinone). $C_{14}H_4(OH)_4O_2$; m.w. 272.06; yel.-red. need.; s.w.; s.al.

rufol (1, 5-anthracenediol; 1, 5-anthradiol). $HOC_6H_3(CH)_2C_6H_3OH$; m.w. 210.08; cr.f.bz.; s.w.; s.al.

rum. Alcoholic beverage obtained from fermented molasses, containing about 48% alcohol.

rumbling. Foundry operation which removes rough parts of castings by tumbling.

rumex. See yellow dock.

rusa oil. See oil, palmarosa.

rutaecarpine. $C_{18}H_{13}N_3O$; m.w. 287.13; yel. pl., need. f.et.ac.; m.p. 257-8; s.al.

ruthenium. Ru; at. wt. 101.7; hex. gray-wh. brittle met.; s.g. 12.063; m.p. 2450; b.p. 4150; i.w.; a metallic element of the platinum group.

ruthenium. Ru; at. wt. 101.70; blk. porous; s.g. 8.6; m.p. >1950; i.w.; i.al.; an allotropic form of ruthenium, one of platinum group of elements.

ruthenium chloride, di-. $(RuCl_2)_x$; m.w. $(172.61)_x$; blk. cr.; i.w.; s.dil.al. (bl.).

ruthenium chloride, tetra-. $RuCl_4$; m.w. 243.53; s.w.; s.al.

ruthenium chloride, tri-. $RuCl_3$; m.w. 208.07; cr. br., deliq.; m.p. d. >500; i.w.; s.al.

ruthenium fluoride, penta-. RuF_5; m.w. 196.70; dk. grn.; s.g. 2.963 $^{18.5}$; m.p. 101; b.p. 270.

ruthenium hydroxide. $Ru(OH)_3$; m.w. 152.72; blk. powd.; s.w.

ruthenium hydroxide, tetra-. $RuO_2 \cdot xH_2O$; blk.; i.w.

ruthenium hydroxide, tri-. $Ru_2O_3 \cdot xH_2O$; yel.; i.w.

ruthenium oxide, di-. RuO_2; m.w. 133.70; tetr. dk. bl.; s.g. 6.97; i.w.

ruthenium oxide, non-. Ru_4O_9; m.w. 550.80; blk. cr.; m.p. $-O$, 440.

ruthenium oxide, pent-. Ru_2O_5; m.w. 283.40; blk. cr.; m.p. $-\frac{1}{2}O$, 360; i.w.

ruthenium oxide, sesqui-. Ru_2O_3; m.w. 251.40; bl.-blk.; i.w.

ruthenium oxide, tetr-. RuO_4; m.w. 165.70; rhomb. yel.; s.g. 3.29 ^{21}; m.p. 25.5; b.p. ca. 100 d.; s.w.; s.al.

ruthenium silicide. RuSi; m.w. 129.76; met. pr.; s.g. 5.40 ^{4}; i.w.

ruthenium sulfide (laurite). RuS_2; m.w. 165.82; cub. gray-blk.; s.g. 6.99; i.w.

rutile (nigrine). A mineral, TiO_2; tetr., redsh. br., red, yelsh., blsh., vlt., blk., sp.gr. 4.18-5.13; hardness 6.0-6.5. See also titanium oxide, di-.

rutin (saphorin). $C_{23}H_{42}O_{20} \cdot 4H_2O$; a natural glucoside containing rhamnose; yel. cryst.; s.w.; s.al.

S

S acid. See 1-naphthol-5-sulfonic acid, 8-amino-.

s-electron. The orbital electron having an azimuthal quantum number of 0.

S-level (S-state). Atomic state in which azimuthal quantum number equals zero.

S.A.E. number. Formally adopted code number of Society of Automotive Engineers identifying alloys and other materials upon which specifications are available.

sabadine. $C_{29}H_{51}NO_9$; m.w. 541.41; need. f.et.; s.w.; s.al.

Sabatier reaction. Hydrogenation of organic compounds in the vapor phase, by the use of finely divided metals as catalysts.

Sabattier effect. Reversal action occurring when an exposed, developed and unfixed film is uniformly exposed to light and further developed.

sabin. Acoustic absorption equal to that of one square foot of absorbing surface.

sabinane, 6-keto-. See a-thujone.

sabinene (1-isopropyl-4-methylenebicyclo [3, 1, 0] hexane). $C_{10}H_{16}$; m.w. 136.12; col. liq.; b.p. 165; i.w.; s.al.

sac fungi. See ascomycetes.

saccharate. A metallic substitution product of sucrose.

d-saccharic acid (2, 3, 4, 5-tetrahydroxyhexanedioic acid [one form]). $COOH(CHOH)_4COOH$; m.w. 210.08; syrup; s.w.; s.al.

saccharides. Carbohydrates.

saccharification. Process of hydrolysing starch with the enzyme diastase, the initial step in the production of beer and distilled beverages.

saccharimeter. Instrument for determining percentage of dissolved sugar by measuring specific rotatory power.

saccharin (o-sulfobenzoic imide; benzoic sulfinide; glucide). $C_6H_4SO_2NHCO$; m.w. 183.11; col. monocl. f. acet.

saccharometer. Hydrometer calibrated to give concentrations of sugar solutions.

saccharose. See sucrose and saccharide.

safety, factor of. See factor of safety.

safety glass (laminated glass). A product made by cementing two sheets of glass together with a transparent, colorless plastic material.

Safex. Dinitrophenylmethyldithiocarbamate.

saffron. Yellow dye obtained from stigma of saffron crocus; used in medicine and cooking; see crocus.

safranines. A group of red to violet diamino dyes, e.g. methyl phenosafranine; starting point for many syntheses, used in dyeing cotton and as a sensitive test for reducing substances, e.g. glucose.

safrole (1-allyl-3, 4-methylenedioxybenzene; shikimole). $CH_2(O_2)C_6H_3$-$CH_2CH{:}CH_2$; m.w. 162.08; col. liq. or monocl.; m.p. 11; b.p. 234.5; i.w.; s.al.

safrole, 2, 5-dimethoxy-. See apiole.

safrole, 3-methoxy-. See myristicin.

sage oil. See oil, sage.

saggar. Baked fire-clay case for firing pottery and porcelain.

sagging. Formation of horizontal straight or looped waves due to flowing of enamelware fired in a vertical position.

sago. A starch obtained from the pith of certain palm stems, swelling in water; used in food products, glues, pastes; in sizing of textiles and cellulose fibres.

sago flour. See sago.

St. John's bread. See hypericum.

St. John's wort. See hypericum.

sal ammoniac. See ammonium chloride.

sal soda. See sodium carbonate, $Na_2CO_3 \cdot 10H_2O$.

salacetol. See salicyl acetal.

salad oil. See oil, salad.

salantol. See salicyl acetal.

salazolon. See salipyrine.

saleratus. See sodium bicarbonate, $NaHCO_3$.

salicin. $C_6H_{11}O_5OC_6H_4CH_2OH$; m.w. 286.14; col. rhomb. need. or leaf.; m.p. 198-202.

salicin, benzoyl-. See populin.

salicyl acetal (saligylacetol; salacetol; salantol). $C_6H_4(OH)COOCH_2CO$-CH_3; m.w. 182.08; m.p. 71; wh. cryst.; s.w.; s.al.; used in medicine.

salicyl alcohol. See saligenin.

salicylaldehyde (o-hydroxybenzaldehyde; salicylic aldehyde). HOC_6H_4CHO; m.w. 122.05; col. liq.; m.p. −7; b.p. 196.5; s.al.

salicylaldehyde, glucoside. See l-helicin.

salicylaldehyde, methyl ether. See benzaldehyde, o-methoxy-.

salicylamide (o-hydroxybenzamide; salicylic amide). $HOC_6H_4CONH_2$; m.w. 137.06; leaf. f.w.; m.p. 140; s.w.; s.al.

salicylamide, N-phenyl-. See salicylanilide.

salicylanilide (N-phenylsalicylamide). $HOC_6H_4CONHC_6H_5$; m.w. 213.09; pr.f.al.; m.p. 135; s.w.; s.al.

salicylic-O-acetic acid. See benzoic acid, o-(carboxymethoxy)-.

salicylic acid (o-hydroxybenzoic acid). HOC_6H_4COOH; m.w. 138.05; monocl. col. need. f.w.; m.p. 159; s.al.

salicylic acid, acetate. See aspirin.

salicylic acid, acetyl-. See aspirin.

salicylic acid, acetyl-p-aminophenyl-. See salophen.

salicylic acid, 5-allyl-3-methoxy-. See eugetic acid.

salicylic acid, 3-amino- (3-amino-2-hydroxybenzoic acid). $NH_2C_6H_3(OH)$-$COOH$; m.w. 153.06; cr.; s.al.

salicylic acid, 4-amino- (4-amino-2-hydroxybenzoic acid). $NH_2C_6H_3(OH)$-$COOH$; m.w. 153.06; redsh. br. cr. powd.; s.w.; s.al.

salicylic acid, 5-amino- (5-amino-2-hydroxybenzoic acid). $NH_2C_6H_3(OH)$-$COOH$; m.w. 153.06; wh. need.; m.p. 283; s.w.; i.al.

salicylic acid, amyl ester (amyl salicylate; pentyl-o-hydroxybenzoate). HOC_6H_4-$CO_2C_5H_{11}$; m.w. 208.12; col.-yelsh. liq.; b.p. 265; i.w.; s.al.

salicylic acid, 3, 5-dinitro- (3, 5-dinitro-2-hydroxybenzoic acid). $(NO_2)_2(HO)$-C_6H_2COOH; m.w. 228.05; need. or pl. $(+1H_2O)$ f.w.; m.p. anh. 174; s.w.; s.al.

salicylic acid, ethyl ester. HOC_6H_4-$COOC_2H_5$; m.w. 166.08; col. liq.; m.p. 1.3; b.p. 234.0; i.w.; s.al.

salicylic acid, ethyl ether. See benzoic acid, o-ethoxy-.

salicylic acid, hexahydro-. See cyclohexanecarboxylic acid, 2-hydroxy-.

salicylic acid, isoamyl ester (isoamylsalicylate; isoamyl o-hydroxybenzoate). $HOC_6H_4COOC_5H_{11}$; m.w. 208.12; col.-ylsh. liq.; b.p. 273; s.al.

salicylic acid, isobutyl ester. HOC_6H_4-$COOC_4H_9$; m.w. 194.11; b.p. 259; i.w.; s.al.

salicylic acid, methyl ester (methyl salicylate; artificial oil of wintergreen). $HOC_6H_4COOCH_3$; m.w. 152.06; col. liq.; m.p. −8.6; b.p. 223.3; s.al.

salicylic acid, methyl ether. See benzoic acid, o-methoxy-.

salicylic acid, 1-naphthyl ester (a-naphthyl salicylate). HOC_6H_4COO-$C_{10}H_7$; m.w. 264.09; wh. cr. powd.; m.p. 83; i.w.; s.al.

salicylic acid, 2-naphthyl ester. See betol.

salicylic acid, nicotine salt. See nicotine, salicylate.

salicylic acid, 3-nitro- (2-hydroxy-3-nitrobenzoic acid). $NO_2C_6H_3(OH)$-$COOH \cdot H_2O$; m.w. 201.06; rhomb. need. f.w.; m.p. hyd. 125, anh. 144; s.al.

salicylic acid, 5-nitro- (2-hydroxy-5-nitrobenzoic acid). $NO_2C_6H_3(OH)$-$COOH$; m.w. 183.05; need. f.w.; m.p. 228; s.al.

salicylic acid, 6-nitro- (2-hydroxy-6-nitrobenzoic acid). $NO_2C_6H_3(OH)$-$COOH$; m.w. 183.05; yel. need.; m.p. 130; s.al.

salicylic acid, O-phenyl-. See benzoic acid, o-phenoxy-.

salicylic acid, phenyl ester (salol). HO-$C_6H_4COOC_6H_5$; m.w. 214.08; col. rhomb. f.al.; m.p. 43; b.p. 173 [15]; s.al.

salicylic acid, phenyl ether. See benzoic acid, o-phenoxy-.

salicylic acid, propyl ester (N-propylsalicylate). $HOC_6H_4COOC_3H_7$; m.w. 180.09; col. liq.; b.p. 240; s.w.; s.al.

salicylic acid, thio-. See benzoic acid, o-mercapto-.

salicylic anhydride (o, o'-dihydroxybenzoic anhydride). $(HOC_6H_4CO)_2O$; m.w. 258.08; yel. amor.; m.p. 200-20; i.w.; s.al.

saligenin (o-hydroxybenzyl alcohol; salicyl alcohol; a, 2-toluenediol). HO-$C_6H_4CH_2OH$; m.w. 124.06; rhomb. f.w.; m.p. 86; s.al.

saligenin, 2-methyl ether. See benzyl alcohol, o-methoxy-.

saligyl acetol. See salicyl acetal.

salimenthol. See methyl salicylate.

salinity, primary. Salinity of the soil due to alkali salts of strong acids, e.g. sodium chloride.

salinity, secondary (permanent hard salts). Salinity of soil due to presence of alkaline earth salts of strong acids, e.g. calcium sulfate.

salinometer. An instrument for measuring the saline density of water in the boilers of ships.

salipyrazolon. See salipyrine.

salipyrine (antipyrine salicylate; salazolon, silipyrazolon). $C_{11}H_{12}N_2O$-$C_7H_6O_3$; m.w. 326.16; cr. powd.; m.p. 92.

salmon oil. See oil, salmon.

salol. See salicylic acid, phenyl ester.

salol, acetoamino-. See salophen.

salophen (acetoaminosalol; acetyl-para-aminosalol; acetyl-para-aminophenyl salicylate). $C_6H_4OHCOOC_6H_4NH$-$COCH_3$; m.w. 271.11; m.p. 187-8; s.w.; s.al.; used in medicine.

salt. A compound in which a metal exists in the place of the hydrogen of an acid, (e.g. potassium bromide, KBr, in which potassium replaces the hydrogen of hydrobromic acid, HB formed (a) by direct replacement of t acid hydrogen with a metal, (b) neutralisation of the acid with appropriate base, or (c) by doub replacement.

salt, acid. A salt formed when only part of the hydrogen of a polyba acid, i.e. an acid whose molecule co tains more than one hydrogen ato is replaced by a metal, e.g. potassiu acid sulfate, $KHSO_4$, formed by r placement of one hydrogen of sulfu acid, H_2SO_4, by a potassium ato

salt, basic. Type of salt formed wh only a part of the −OH groups of base containing more than one su group is neutralized by an acid, e. basic bismuth chloride, $Bi(OH)_2C$ which may be formed by parti neutralisation of the compou $Bi(OH)_3$, bismuth hydroxide.

salt cake. A commercial sodium sulfa obtained as a by-product in the manu facture of hydrochloric acid.

salt color. See direct dye.

salt hydrate. A salt containing water crystallization, e.g. $Na_2SO_4 \cdot 10H_2$

salt of Norton. See platinum chlorid tetra-(ic).

salt of sorrel. $KHC_2O_4 \cdot H_2C_2O_4 \cdot 2H_2$ an acid potassium oxalate, the so tasting ingredient of sorrel or rhubar used for removing ink stains.

salt water plating. A method of platin without external current, the platin bath itself generating the curren the anode, of zinc, is immersed in strong salt solution, the cathode the article to be plated, immerse in an appropriate metallic solutio the two solutions being separated b a porous diaphragm, and the electrod connected by a conductor.

salting out. The precipitation of a organic product which is dissolved dispersed in water, by the additio of an inorganic compound, usuall salt, the organic substance bein insoluble, or considerably less solubl in a solution of the latter.

saltpeter. See potassium nitrate.

saltpeter, Chile. See soda niter.

salvarsan. See arsphenamine.

samarium. Sm (or Sa); at. wt. 150.4 hex. gray-wh. met.; s.g. 7.7; m. 1300-1400; a metallic element belon ing to the rare earth group.

samarium acetate. $Sm(C_2H_3O_2)_3 \cdot 3H_2$ m.w. 381.55; s.g. $4H_2O$, 1.94; s.w.

samarium acetylacetonate. $Sm(CH$ $COCHCOCH_3)_3$; m.w. 447.59, mass.; m.p. 146-7; s.w.

samarium bromate. $Sm(BrO_3)_3 \cdot 9H_2$ m.w. 696.32; hex. yel.; m.p. 75; b. $-9H_2O$, 150; s.w.; s.al.

samarium bromide. $SmBr_3 \cdot 6H_2O$; m. 498.27; yel. cr., deliq.; s.g. 2.971

samarium carbide. SmC_2; m.w. 174.4 hex. yel.; s.g. 5.86.

samarium chloride. $SmCl_3$; m.w. 256.8 yelsh.-wh. cr., hyg.; s.g. 4.46 m.p. 678±2; s.w.; s.al.

samarium chloride. $SmCl_3 \cdot 6H_2O$; m. 364.89; tricl. grn.-yel.; deliq.; s. 2.383; m.p. $-5H_2O$, 110.

samarium chloride(ous). $SmCl_2$; m. 221.34; red.-br. cr.; s.g. 3.687 s.w. d.; i.al.

samarium fluoride. $SmF_3 \cdot \frac{1}{2}H_2O$; m. 216.44; i.w.

marium hydroxide. $Sm(OH)_3$; m.w. 201.45; pa. yel. powd.; i.w.

marium iodide. SmI_3; m.w. 531.19; or.-yel. cr.; m.p. 816-24; b.p. d. 800.

marium nitrate. $Sm(NO_3)_3 \cdot 6H_2O$; m.w. 444.55; tricl. pa. yel.; s.g. 2.375; m.p. 78-9; s.w.

marium oxalate. $Sm_2(C_2O_4)_3 \cdot 10H_2O$; m.w. 745.02; cryst.; i.w.

marium oxide. Sm_2O_3; m.w. 348.86; wh.-yelsh. powd.; s.g. 7.43; i.w.

marium oxide, per-. Sm_4O_9 (exist. quest.); m.w. 745.72; i.w.

marium sulfate. $Sm_2(SO_4)_3 \cdot 8H_2O$; m.w. 733.16; monocl. lt. yel.; s.g. 2.96; m.p. $-8H_2O$, 450; s.w.

marium sulfate, basic. $Sm_2O_2SO_3$; m.w. 428.92; yel. powd.; b.p. d. 1100; i.w.

marium sulfide. Sm_2S_3; m.w. 397.04; yel. mass; s.g. 3.7.

marskite (nohlite; victinghofite; yetteroilmenite). A rare earth mineral; sp.gr. 5.6-5.8; blk.

mol. See methyl salicylate.

nd bobbing. Process in which a polishing action is produced by the furrowing of relatively coarse abrasives loosely applied between the work and a revolving bob.

nd, glass. A pure sand, consisting almost entirely of silica, suitable for making glass.

nd, placing. A sand free from iron and fluxes, used in the pottery industry for the placing of bisque-ware.

nd, tempering. Foundry sand wetted to the proper dampness for molding.

ndblasting. The cleaning of metal castings or stone surfaces with sand directed against the object by a blast of compressed air.

ndalwood. The wood of the Pterocarpus santalinum and santalum album; used in the manufacture of perfume preparations and cosmetics, in dyeing, as a paint and varnish color, and as a fumigant.

ndalwood oil. See oil, sandalwood.

Sandarac, gum. See gum, Sandarac.

nding. Finishing of a surface by means of a revolving wheel covered with sandpaper.

nding sealer. Type of lacquer used over surfaces treated with wood fillers, and under finishing lacquers.

ndstones. A class of stones formed by the consolidation of sand particles, some of which are used as building materials.

nguinarine. $C_{20}H_{15}NO_4 \cdot H_2O$; m.w. 351.14; bl. fluores. need.; m.p. 213; i.w.; s.al.

nguinific. See haematopoietic.

ntalic acid. $C_{15}H_{14}O_3$; m.w. 274.11; red micr. pr.; m.p. 226; b.p. 195°; i.w.; s.al.

ntalwood oil. See oil, sandalwood.

Santicizer. A plasticizer for lacquers.

Santicizer 1-H. Cyclohexyl-para-toluenesulfonamide; fine wh. cryst.; maximum m.p. 86° C.; s.al.; i.w.; a plasticizer which imparts moisture resistance to nitrocellulose and cellulose acetate.

Santicizer 3. P-toluene sulfonamide, ethyl-.

Santicizer 8. Mixture of o- and p-toluene ethyl sulfonamides; a light amber liquid; slight characteristic odor; crystallization point about 18° C.; a plasticizer for cellulose acetate.

Santicizer 9. A mixture of o- and p-toluene sulfonamides; fine granular white particles; maximum m.p. 105° C.; slightly soluble in alkali; a plasticizer for most synthetic resins and protein compounds.

Santicizer 10. Ortho-cresyl-para-toluene sulfonate; wh. cryst.; crystallizes at 51° C.; i.w. a plasticizer for cellulose esters and many resins.

Santicizer 10-M. M-o-p-cresyl benzene sulfonate.

Santicizer 81. Methyl o-p-toluene sulfonamide.

Santicizer B-16. Butyl phthalyl butyl glycollate; col. liq.; b.p. 219°; sp.gr. 1.097 ^{25}; i.w.; a solvent for nitrocellulose and resins; a plasticizer.

Santicizer E-15. Ethyl phthalyl ethyl glycollate; practically colorless liq.; sp.gr. 1.180 ^{25}; b.p. 190°; crystallizing point 20° C.; i.w.; a plasticizer and solvent for nitro- and acetyl cellulose and most resins.

Santicizer M-17. Methyl phthalyl ethyl glycollate; practically colorless liquid; sp.gr. 1.220 ^{25}; b.p. 189°; i.w.; a plasticizer and solvent for cellulose acetate and cellulose nitrate.

Santobrite. Sodium pentachlorphenate, a water-soluble industrial preservative; used in cold water paints, adhesives, preservation of green lumber.

Santocel. A light porous form of silica aerogel; a heat insulating agent, thickening agent for volatile and non-volatile liquids, anti-cracking agent.

Santochlor. Pure para-dichlorobenzene used in deodorizing and as a moth and peach tree borer control.

Santocure. An amino derivative of 2-thiobenzothiazole; a rubber accelerator with very delayed action, which permits easier working of rubber stocks and finds use in sponge stock, footwear.

Santoflex A. A mixture of a ketone-amine with diphenyl-p-phenylene-diamine; powder; a rubber anti-oxidant.

Santoflex B. A condensation product of acetone and para-amido-diphenyl; waxy solid; a rubber anti-oxidant.

Santolite. See Gardlite.

Santolite K. A sulfonamide aldehyde alkyl resin; soft and sticky, flowing slowly at 30° C.; having plasticizing properties; increasing resistance to moisture penetration of cellulose ester compositions.

Santolite MHP. A sulfonamide aldehyde resin, consisting of nearly colorless, brittle lumps, softening at about 62° C.; used in cellulose esters and specialty lacquers.

Santolite MS. A soft, practically colorless resin, a condensation product of formaldehyde and aromatic sulfonamides; a viscous liquid above 50° C.; used in water-white lacquers.

Santomerse. An alkylated aryl sulfonate used as a wetting agent, detergent and penetrant.

santonic lactone. See santonin.

santonin (santonic lactone). $C_{15}H_{18}O_3$; m.w. 246.14; col. rhomb. pr.; m.p. 170; s.al.

Santophen. A toxic benzylated or chlorinated phenol, cresol, etc.

Santophen 20. Pentachlorphénol; dark gray flakes; industrial preservative in oil base paints, adhesives, wood, etc.

Santoresin. A synthetic petroleum resin.

Santosite. Anhydrous sodium sulfite; reducing agent for removing oxygen from water.

Santotan KR. Basic chromium sulfate; grn. cryst.; s.w.; used in tanning.

Santotan S. Basic chromium sulfate; used in tanning.

Santox. An antioxidant for soap which prevents the discoloration in sunlight and the decomposition by oxidation of the soap.

Sapamine A. Diethylaminoethyloleylamide acetate; a leveling agent for basic dyes, used in the textile industry.

Sapamine FL. A sulfonate of a complex octo-decyl-alkyl compound; a softening agent for use in the dye-bath of direct colors.

Sapamine KW. Diethylaminoethyl-stearylamide hydroacetate; a cation-active fixing agent for direct dyes; a substantive softening agent; a leveling agent for basic dyes.

Sapamine MS. A quarternary salt used as an emulsifier, a leveling agent for basic dyes and a cation-active fixing agent for direct dyes.

saphorin. See rutin.

saponification. Hydrolysis by means of an alkali of an oil or fat, or the neutralization of a fatty acid, with the formation of a soap, e.g. treatment of glyceryl oleate with sodium hydroxide to yield sodium oleate (a soap) and glycerine.

saponification equivalent. The weight of an ester which consumes in saponification one gram equivalent weight of alkali, e.g. 40.01 grams of caustic soda.

saponification number. The number of milligrams of potassium hydroxide necessary to completely saponify one gram of a particular fat or oil.

saponins. $C_{32}H_{54}O_{18}$; a group of compounds derived from many plants, tri-terpene glucosides, of incompletely known structure, forming colloidal solutions which foam on shaking, many being hemolytic in nature; used in medicine (sarsaparilla), in beers to promote frothing, as stabilizers for emulsions, as wetting-out agents and soap substitutes, especially in hair washes.

sapphire. See corundum.

saprogenic. Term applied to bacteria which produces proteolytic enzymes.

saprophyte. A fungus subsisting on dead organic matter.

sarcine. See hypoxanthine.

sarcolactic acid. See d-lactic acid.

sarcosine (N-methylglycine). $CH_3NH\text{-}CH_2COOH$; m.w. 89.06; deliq. col. rhomb. f.dil.al.; s.w.; s.al.

sarcosine, hydrochloride. $HCl\cdot NH(CH_3)CH_2COOH$; m.w. 125.53; need. f.al.; m.p. 170-2; s.w.; s.al.

sardine oil. See oil, sardine.

sardonyx. A variety of onyx; composed of alternate layers of red sand or carnelium and chalcedony.

sassafras oil. See oil, sassafras.

sassolite (boric acid). A mineral, $B(OH)_3$; tricl., wh. scales; sp.gr. 1.48; hardness 1.

satin spar. See satin white.

satin white (satin spar). $Al(OH)_3 + CaSO_4$ + free CaO; a white amorphous solid; used in the manufacture of dye lakes, as a paint pigment, and in glazing paper.

saturated compound. A compound in which all of the valencies of the elements are satisfied; in organic chemistry, having no double or triple bonds, i.e., incapable of absorbing substances by addition, such as hydrogen or iodine.

saturated solution. A solution containing as much of a particular substance in solution as it can dissolve at that temperature; a solution which is in equilibrium with undissolved solute at a given temperature.

saturated steam. See steam, saturated.

saturated volume. Volume in cubic feet of 1 pound of dry air plus that of water vapor necessary to saturate it.

Saxony blue. See smalt.

Saybolt viscosity. A scale of viscosity, measured by the number of seconds required for a sample to pass thru a standard orifice in a Saybolt viscosimeter under the proper conditions.

scacchite. See manganese chloride.

scalar. Term applied to a quantity having magnitude but not involving direction, e.g. mass or volume.

scalar algebra. Algebra of ordinary positive and negative numbers.

scalar product. Product of the magnitudes of two vectors and cosine of the angle between their directions.

scale, mill. More or less adherent oxide layer formed on iron and steel during fabrication.

scale, trip. Stabilised pan scale in which plates or pans are positioned above an equal arm beam.

scale wax. Paraffin wax which has had all but a small percentage of its oil sweated out.

scalene. Term applied to a triangle with unequal sides, or a cone or cylinder with axis inclined to the base.

scammony resin (resin of ipomea). Mixture of resins obtained from scammony root; s.al., used in medicine.

scandium. Sc; at. wt. 45.10; silv.; s.g. 2.5; m.p. 1200; b.p. 2400; s.w. d. ev. H_2; a metal belonging to the rare earth group; never isolated in free form.

scandium acetylacetonate. $Sc(CH_3CO\text{-}CHCOCH_3)_3$; m.w. 342.26; col. pl. m.p. 187.5; b.p. subl. 210-15; s.w.; s.al.

scandium chloride. $ScCl_3$; m.w. 151.47; col. cr.; m.p. 939; b.p. subl. 800-50; s.w.; i. abs. al.

scandium nitrate. $Sc(NO_3)_3$; m.w. 231.12; col.; m.p. 150; s.w.

scandium nitrate. $Sc(NO_3)_3 \cdot 4H_2O$; m.w. 303.19; prisms, deliq.; m.p. $-4H_2O$, 100; s.w.

scandium oxalate. $Sc_2(C_2O_4)_3 \cdot 5H_2O$; m.w. 444.28; cryst.; m.p. $-4H_2O$, 100.

scandium oxide. Sc_2O_3; m.w. 138.20; wh. powd.; s.g. 3.86; i.w.

scandium sulfate. $Sc_2(SO_4)_3$; m.w. 378.38; col. cr.; s.g. 2.579; s.w.

scandium sulfate. $Sc_2(SO_4)_3 \cdot 5H_2O$; m.w. 468.46; s.w.

scandium sulfate. $Sc_2(SO_4)_3 \cdot 6H_2O$; m.w. 486.47; m.p. $-4H_2O$ 100, $-6H_2O$ 250; s.w.

scapolite (wernerite). A mineral, $nNa_4Al_3Si_3O_{24}Cl + mCa_4Al_6Si_6O_{25}$; tetr., col., wh., gray, grnsh., blsh., redsh.; sp.gr. 2.6-2.8; hardness 5-6.

Scarat. A synthetic urea resin.

scarlet corns. See kermes.

scatter, coefficient of. Rate of increase of reflectance with increase of thickness of a coating.

scatter diagram. See correlation table.

scattering coefficient, atomic. See atomic scattering coefficient.

Schaffer's acid. See 2-naphthol-6-sulfonic acid.

Schaffer's salt. Sodium salt of Schaffer's acid (q.v.).

Scheele's green. See copper arsenite, ortho-, acid(ic).

scheelite. A mineral, $CaWO_4$; tetr., col., wh., yel., br., grn., redsh. blk.; sp.gr. 5.88-6.14; hardness 4.5-5.0.

Schellackersatz. A synthetic tar-acid resin.

Scheibler's reagent. A reagent used to test for alkaloids; 20 g. sodium tungstate and 14 g. sodium phosphate per 100 cc. of water acidified with nitric acid.

Schick test. A test devised to indicate whether or not an individual has an antitoxic immunity to diphtheria.

Schiff's reagent. A reagent which develops colors upon addition to aldehydes.

schizogony. Reproduction by formation of endospores.

schizomycetes. The true bacteria; one-celled microscopic fungus parasitic plants.

Schlippe's salt. See sodium thioantimonate.

Schöllkopf's acid. See naphthionic acid.

schönite. See magnesium potassium sulfate.

schorlomite. A mineral, $3CaO\cdot(Fe,Ti)_2O_3\cdot 3(Si,Ti)O_2$; blk.; sp.gr. 3.783-3.88; hardness 7.0-7.5.

Schottky effect. An electron escaping from a surface induces a charge in the latter equal in magnitude but opposite in sign to its own; the attraction between these two charges retarding the free escape of the electron.

Schou oil (Paalsgaard oil). Emulsifier made by oxidizing soybean or other vegetable oil until jelled and thinning down with vegetable oil.

Schroedinger equation. Equation of a de Broglie wave.

Schüler tube. Hollow cathode vacuum tube used for ionizing gases and obtaining vapor spectra.

Schultz number. Classification of dyes by number as given in the Dyestuff Tables of Schultz, e.g. rose bengale (597).

Schumann region. The range of short ultraviolet wave lengths down to 1200 Å.

schwarzite (mercurial tetrahedrite). A mineral; sp.gr. 5.1; dark gr.-blk.

Schweitzer's reagent. An ammoniacal solution of cupric hydroxide used for dissolving cellulose, utilized in the cuprammonium process of rayon manufacture.

scilla. See squill.

Sclerolac (hard lac resin). Solvent-extracted shellac.

scleroprotein (B). See albuminoid.

scleroscope. Instrument for measuring hardness of metal.

sclerotium. Blackish mass formed by certain fungi.

scolecite. A mineral, $CaO \cdot Al_2O_3 \cdot 3SiO_2 \cdot 3H_2O$; monocl.; sp.gr. 2.16-2.4; hardness 5.0-5.5.

i-scopolamine (atroscine). $C_{17}H_{21}NO_4$; m.w. 303.17; cr.; m.p. 82-3; s.w.; s.al.

l-scopolamine. See hyoscine.

scopoline (oscine). $C_8H_{13}O_2N$; a basic hydrolytic scopolamine product.

scorodite. A mineral, $FeAsO_4 \cdot 4H_2O$; rhomb., grn., br.; sp.gr. 3.1-3.3; hardness 3.5-4.0.

scouring. Removal of grease, dirt and other extraneous matter from wool.

screen-grid tube. An amplifying vacuum tube having a plate surrounded by a positively charged wire grid.

screen sizing. Separation of a mixture of various sized grains into two or more portions.

screening (steric hindrance effect). Shielding effect of inner orbital electrons of an atom on attraction of nucleus for outer electrons; see also screen sizing.

scrooping. Process for giving silk a stiff or harsh feel.

scrubbing. Purification of a gas by washing in specially constructed towers.

scruple (℈). $\frac{1}{24}$th of an ounce (Apothecary).

sea foam. See meerschaum.

sea onion. See squill.

sea parsley. See lovage.

seal oil, mineral. See oil, mineral seal.

sebacic acid (decanedioic acid). $COOH(CH_2)_8COOH$; m.w. 202.14; thin col. leaf.; m.p. 133; b.p. 295 [100]; s.al.

sebacic acid, dibutyl ester. A stable, nonvolatile ester; water-white; b.p. 344-345; a plasticizer of vinyl and acrylic resins.

sebacic acid, diethyl ester (ethyl sebacate). $[(CH_2)_4COOC_2H_5]_2$; m.w. 258.20; col. liq.; m.p. 1; b.p. 308; s.al.

sebacic acid, piperazinium salt. $C_4H_{10}N_2 \cdot C_{10}H_{18}O_4$; m.w. 288.23; wh. cr.; m.p. 166-8; s.w.; s.al.

secant. A line which cuts the circumference of a circle at two points; in trigonometry, the ratio of the hypotenuse to the adjacent side of a right triangle.

second. The primary standard of time, equal to $\frac{1}{86,400}$ th part of the mean solar day.

secondary alcohol. An alcohol in which the carbon atom to which the —OH group is attached is itself attached to two carbon atoms, e.g. propyl alcohol, $\begin{matrix} CH_3 \\ CH_3 \end{matrix}\!\!>\!CHOH$.

secondary amine. An amine in which the amino nitrogen atom is attached to two carbon atoms, e.g. dimethyl amine, $\begin{matrix} CH_3 \\ CH_3 \end{matrix}\!\!>\!N—H$.

secondary carbon atom. A carbon atom attached to two other carbon atoms.

secondary electron. That electron which has the less energy after collision with another; an electron resulting from a secondary emission.

secondary emission. Emission resulting from the action of a primary emission.

secondary phosphate. See phosphate, secondary.

secondary salinity. See salinity, secondary.

secondary X-radiation. Term, applied to radiations, which includes fluorescent X-rays, which are characteristic of the irradiated substance, scattered rays of the same wave length as the primary and those which have experienced the Compton shift.

secretin. A pancreas-stimulating hormone secreted during digestion.

section modulus. Product of sectional moment of inertia of cross section of an elastic column or beam about its neutral axis.

sector. Part of circle included by two radii and the arc between them.

sedimentary rock. A rock which is formed from deposits of mud, sand or gravel originally deposited by rivers and other bodies of water.

sedimentation (thickening). The process of gravitational settling of solid particles suspended in a liquid.

sedimentation potential. See Dorn effect.

seeding. Introduction of crystals into a super-saturated solution to induce crystallization.

segment. Part of a circle included between a chord and its arc.

Seger cone. Cone or pyramid prepared from clay mixtures, of known fusion points; used to estimate the temperature of a furnace.

selection principle. Principle relating to actually occurring electron transitions as differentiated from those which might be expected to occur.

Selenac. Selenium diethyldithiocarbamate; a sulfur-free vulcanizing agent.

selenic acid. H_2SeO_4; m.w. 145.22; hex. pr., col.; s.g. solid 2.951 [15]; liq. 2.608 [15]; m.p. 58; easily undercools; b.p. 260 d.; s.w. s.al. d.

selenic acid. $H_2SeO_4 \cdot H_2O$; m.w. 163.23; col. liq. or need. or rect. pl.; s.g. 2.627 [15]; liq. 2.356 [15]; m.p. 25-6; easily undercools; b.p. 205; s.w.; s.al.

selenic acid. $H_2SeO_4 \cdot 4H_2O$; m.w. 217.28; col. liq.; m.p. −51.7; easily undercools; b.p. 172 [85] $-H_2O$; s.w.

selenide. Compound of selenium and a metal, e.g. lead selenide, PbSe.

selenide, diethyl. See ethyl selenide.

selenide, dimethyl. See methyl selenide.

selenious acid. H_2SeO_3; m.w. 129.22; hex. col.; s.g. 3.004 [15]; b.p. $-H_2O$; s.w.; s.al.

selenite. A colorless transparent form of gypsum (q.v.).

selenium. Se_8; m.w. 633.60; monocl. (hex. ?) red., 2.9 [220] liq.; sp.gr. 4.46 [25] (4.50); m.p. 170-180; b.p. 688; i.w.; i.al.; an allotropic form of selenium.

selenium. Se_8; m.w. 633.60; vitreous, red to blk.; 4.28 (4.14 [22]); m.p. indef.; b.p. 688; i.w., i.al., an allotropic form of selenium.

selenium. Se_8 <500 (Se_2 at 900); m.w. 633.60; trig. gray met.; sp.gr. 4.79 [15]; m.p. 217; b.p. 688; i.w., i.al.; an allotropic form of selenium.

selenium. Se_8; m.w. 633.60; amor. red.; s.g. 4.26; m.p. tr.-vit. 40-50, -met. 200; b.p. 688; i.w.; i.al.; an allotropic form of selenium.

selenium boride. Se_3B_2; m.w. 259.24; yel. gray. powd.

selenium bromide, mono-. Se_2Br_2; m.w. 318.23; dk. red. liq.; s.g. 3.604 [15]; b.p. 227 d.

selenium bromide, tetra-. $SeBr_4$; m.w. 398.86; or. red.-br. cr.; m.p. d. 75.

selenium bromochloride, tri-. $SeBr_3Cl$; m.w. 354.41; orange cr.

selenium bromodinitride. Se_2N_2Br; m.w. 266.33; i.w.

selenium bromotrichloride. $SeBrCl_3$; m.w. 265.49; yel. br. cr.; m.p. 190.

selenium cell. A photoelectric cell using a thin film of selenium utilizing the variable resistance of a selenium film upon exposure to light.

selenium chloride, mono-. Se_2Cl_2; m.w. 229.31; br.-red. liq.; s.g. 2.91 [17]; 2.77 [23]; m.p. −85; b.p. 130 d.

selenium chloride, tetra-. $SeCl_4$; m.w. 221.03; cub. wh.-yel.; deliq.; s.g. 3.78-85 [360]; m.p. 305 subl. 170-196; b.p. d. 288.

selenium fluoride, hexa-. SeF_6; m.w. 193.20; gas, col.; s.g. 3.25 [-28] g/l.; m.p. −39; subl. −46.6; b.p. −34.5.

selenium fluoride, tetra-. SeF_4; m.w. 155.20; col. liq. or wh. cr.; m.p. −80; b.p. >100 (93).

selenium iodide, mono-. Se_2I_2; m.w. 412.24; steel gray cr.; m.p. 68-70; b.p. d. 100.

selenium iodide, tetra-. SeI_4; m.w. 586.88; dk. gray cr.; m.p. 75-80; b.p. −4I, 100.

selenium nitride. Se_4N_4; m.w. 372.83; amor. or.-yel. to brk. red; m.p. exp. 160-200; i.w.; i.al.

selenium oxide, di-. SeO_2; m.w. 111.20; monocl. (tetr.) col.; s.g. 3.95$\frac{1}{4}$; m.p. 340; b.p. subl. 315-7; s.w.; s.al.

selenium oxide, tri-. SeO_3; m.w. 127.20; amor. pa. yel.; s.g. 3.6; m.p. d. 120; s.w. d.; s.al.

selenium oxybromide. $SeOBr_2$; m.w. 255.03; red.-yel. cr.; s.g. lq. 3.38 [80]; m.p. 41.6; b.p. 217 [740] d.

selenium oxychloride. $SeOCl_2$; m.w. 166.11; col.-yel. liq.; s.g. 2.42 [25]; m.p. 8.5 (10.9); b.p. 176.4; one of most powerful solvents known, dissolves Redmanol and Bakelite.

selenium oxyfluoride. $SeOF_2$; m.w. 133.20; col. liq.; s.g. 2.67; m.p. 4.6; b.p. 124; s.al.

selenium sulfide, di-. SeS_2; m.w. 143.32; br. red.-yel.; m.p. <100; i.w.

selenium sulfide, mono-. SeS; m.w. 111.26; or. yel. tabl. or powd.; s.g. 3.056 [0]; m.p. d. 118-9; i.w.

selenium sulfotrioxide. $SeSO_3$; m.w. 159.26; grn. pr. or yel. powd.; m.p. $-SO_3$, 40.

selenium sulfoxytetrachloride. $SeSO_3Cl_4$; m.w. 301.09; hex. pr.; m.p. 165; b.p. 183.

selenizing. The coating of magnesium alloys with selenium.

self color. See mass color.

sellaite. A mineral, MgF_2; tetr., col.; sp.gr. 2.972-3.170; hardness 5.

semi-bituminous coal. A variety of bituminous coal low in volatile matter; of very good heating quality.

semi-drying oil. See oil, semi-drying.

semi-killed steel. See steel, semi-killed.

semi-permeable membrane. Membrane which permits the passage of water but does not permit the passage of dissolved substances.

semi-polar bond (dative bond, coordinate link). Linkage wherein two portions of a molecule are held together by a pair of electrons contributed by only one of the pair. It is covalent in nature, but since both electrons are contributed by one portion, an electric charge, or electrovalency, also exists.

semicarbazide (aminourea; carbamylhydrazine). $NH_2NHCONH_2$; m.w. 75.06; pr.f.al.; m.p. 96; s.w.; s.al.

semicarbazide, hydrochloride. $NH_2NHCONH_2 \cdot HCl$; m.w. 111.53; pr.f.-dil.al.; s.w.; i.al.

semicarbazide, 1-phenyl- (1-carbamyl-2-phenylhydrazine). $C_6H_5NHNHCONH_2$; m.w. 151.09; leaf. f.dil.al.; m.p. 172; s.w.; s.al.

semicarbazide, 1-thio-. $NH_2NHCSNH_2$; m.w. 91.12; need. f.w.; m.p. 183; s.w.; s.al.

seminose. See d-mannose.

semolina. A nitrogenous, hard-grain, wheat food preparation.

senarmontite. A mineral, Sb_2O_3; cub., col. to grayish; sp.gr. 5.22-5.30; hardness 2.0-2.5.

seneca root. See senega.

senega (senega snake root; seneca root; rattlesnake root). Dried root of polygala senega; used in medicine.

senegal gum. See gum arabic.

senna. Dried leaflets of cassia; used in medicine.

sensibility reciprocal. Change in applied load of a scale necessary to change position of equilibrium of a weigh-beam or indicator by one unit on the scale.

sensible heat. See heat, sensible.

sensitivity. Responsiveness of a weigh-beam or indicator of a scale to change in the applied load.

sensitometry. See photo-chemistry.

sepia. Red-brown pigment obtained from ink of cuttlefish; also a calcareous portion of the backs of cuttlefish; used in polishing.

sepiolite (meerschaum). A mineral, $2MgO \cdot 3SiO_2 \cdot 2H_2O$; monocl., wh., yelsh., grayish; sp.gr. 2.02; hardness 2.0-2.5.

septate. In biology, having dividing walls or sections.

septentrionaline. $C_{31}H_{46}N_2O_9$(?); m.w. 590.37; wh. powd.; m.p. 129; s.al.

series. In electricity, "in series" refers to a mode of connecting electrical devices in a circuit, viz. in such a way that the total current of the circuit passes thru each device; in mathematics, a series of numbers or terms in which the relationship of consecutive terms is defined mathematically.

series limit. Convergence frequency of a series of spectral lines.

series, multiple. Circuit in which two or more series circuits are connected in parallel.

d-serine (d-β-hydroxyalanine). $CH_2OHCH(NH_2)COOH$; m.w. 105.06; hex. tab.; s.w.; i.al.

dl-serine. $CH_2OHCH(NH_2)COOH$; m.w. 105.06; monocl. pr. f.w.; s.w.; i.al.

l-serine (l-α-amino-β-hydroxypropionic acid; l-β-hydroxyalanine). $HOCH_2CH(NH_2)COOH$; m.w. 105.06; hex. pl. or pr.; s.w.

Serizyme. A proteolytic enzyme used in desizing acetate rayon fabrics and others containing protein sizing and in a patented process in the treatment of raw silk to facilitate subsequent degumming.

serobacterin. A sensitized bacterial vaccine.

serology. The science of the diagnosis and treatment of disease with sera.

serpentine. A term including the minerals chrysotile (a variety of asbestos) and verd-antique; $3MgO \cdot 2SiO_2 \cdot 2H_2O$; monocl. (opt.), gray to grnsh. or brnsh.; sp.gr. 2.50-2.65; hardness 2.5-4.0.

sesame oil. See oil, sesame.

sesqui-. Prefix indicating proportion of 2:3, e.g. manganese *sesqui*oxide, Mn_2O_3.

sesquiterpene. A terpene of formula $C_{15}H_{24}$, e.g. cadinene.

set, permanent. Percentage of permanent elongation in a sample of rubber which has been stretched.

setting point. Temperature at which an oil ceases to flow when acted on by a small definite pressure under the proper conditions.

setting up. Cessation of flow in a drying coating such as paint.

sex hormones. Chemical substances elaborated in the ovaries and testes and secreted directly into the blood, influencing sexual development and function. These hormones are of sterol structure. Oestrone is an example of a female hormone, testosterone of a male hormone.

sextant. An instrument for measuring angles in any plane, used at sea for measuring the elevation of the sun and other heavenly bodies.

Sextol. Methyl cyclohexanol.

Sextol stearate. Methyl cyclohexanol stearate.

Sextone. See Anon.

Sextone B. See Methylanon.

seybertite. $10(MgCa)O \cdot 5Al_2O_3 \cdot 4SiO_2 \cdot 3H_2O$; a brittle mica; brn. or grn.

shade. A single color whose hue has

been modified by the addition of a color adjacent to it in the spectral scale, e.g. red may be "shaded" to a bluish tone by addition of violet; a color toned with black or with a complementary color having a dulling effect.

shakespear. See katharometer.

shale. A fine-grained clay rock with slate-like cleavage, sometimes containing an organic oil-yielding material.

shale oil. See oil, shale.

shark liver oil. See oil, shark liver.

shark oil. See oil, shark and oil, shark liver.

sharps. See middlings.

shea butter. Substance obtained from nuts of bassia parkii; sp.gr. 0.9175; grn.-wh. solid; used as a lard substitute and in candles.

shear. Progressive relative displacement of adjacent layers because of strain; tangent of angle of shear.

shear modulus (rigidity modulus). Ratio of shearing stress to strain.

shearling. Sheepskin which has been sheared just prior to the killing of animal.

sheary. Lacking uniformity of gloss after application and drying.

sheen. Specular gloss at near grazing angles of incidence and reflection.

sheep dip. Insecticidal liquid thru which sheep are run, such as lime-sulfur baths, tobacco extracts, and carbolic acid.

Shell Solvents. Petroleum solvents; b.p. 122-203° C.

shellac (lac, mecca; garnet lac; gum lac; stick lac). A resin produced by the insect coccus lacca on certain trees; sp.gr. 1.08-1.13; s.al.; used for varnishes, sealing wax, plastics, inks, in lithography, and as a binder.

Shenstone effect. Increased photoelectric emission of certain metals after passage of an electric current.

sherardizing. Surface treating of iron with zinc, resulting in a thin layer of iron-zinc alloy.

shikimole. See safrole.

shim. Thin strip used in fitting a bearing to a shaft.

shiraz, gum. See gum, shiraz.

Shirlan. Salicylanilide used for moth-proofing and mildewproofing textiles.

shiv oil. See oil, shiv.

shives. See motes.

shock-molding. Molding of plastics wherein pressure is applied suddenly.

short. In plastics, having a large yield value and high mobility; lacking strength and elasticity, e.g. butter.

shortening. Fat used in baking to produce a tender and flaky product.

shortness. Lack of distensibility.

shorts. The parts of husk which are finer than bran; used in flour-milling.

shot. In pile floor covering terminology, the number of filling yarns per row of tufts.

shower, cosmic ray. An aggregation of ion pairs at the same instant, presumably due to cosmic rays.

shrinkage water. Water lost by clay dried from point of maximum plasticity to point where practical maximum shrinkage is reached.

shunt. A low resistance connected in parallel with some electrical device, such as an ammeter coil, to prevent too large a flow of current thru the latter.

siccative. A drying agent.

siderite (spathic iron, chalybite). A mineral, $FeCO_3$; hex., brnsh. to blk., gray, grn., wh.; sp.gr. 3.00-3.88; hardness 3.5-4.5.

Siegbahn unit. See x-unit.

sienna. A yellow clay used as a paint pigment, containing hydrated ferric oxide and manganic oxide; sp.gr. raw 3.27, burnt 3.95. See also umber.

sigma value. The value of a quantum number which quantizes the component of angular momentum of spin about the axis of a figure in a diatomic molecule.

silicate, ortho-. A salt which may be considered derived from the acid $HgSiO_4$, e.g. Mg_2SiO_4, magnesium orthosilicate.

Sil-O-Cel. A heat-insulating material made from diatomaceous earth.

silane. See silicon hydride.

silanol (mono). See silicol.

Silex. Silica.

silica. See silicon oxide, di-.

silica gel. An incompletely dehydrated silicic acid used as an absorption agent.

silicane amine, tri-. $(SiH_3)_3N$; m.w. 107.26; s.g. 0.895 $^{-108}$; m.p. −105.6; b.p. 52.

silicane, bromo-. SiH_3Br; m.w. 111.00; s.g. 1.72 $^{-80}$; m.p. −94; b.p. 1.9.

silicane, chloro-. SiH_3Cl; m.w. 66.54; s.g. 1.145 $^{-112}$; m.p. −118.1; b.p. −30.4.

silicane, chloromethyl-. SiH_3ClCH_3; m.w. 80.56; s.g. 0.935 $^{-80}$; m.p. −134.5; b.p. 7.

silicane, dibromo-. SiH_2Br_2; m.w. 189.91.

silicane, dichloro-. SiH_2Cl_2; m.w. 100.99; s.g. 1.42 $^{-122}$; m.p. −122; b.p. 8.3.

silicane, dichloromethyl-. $SiHCl_2CH_3$; m.w. 115.01; s.g. 0.93 ^{0}; m.p. −93.

silicane, dimethyl- (dimethylmonosilane). $(CH_3)_2SiH_2$; m.w. 60.12; sp.gr. 0.68 $^{-20}$; m.p. −150; b.p. −20.1.

silicane ether. $(SiH_3)_2O$; m.w. 78.17; s.g. 0.881 $^{-80}$; m.p. −143.6; b.p. −15.2.

silicane, ethoxytriethyl- (triethylsilicol ethyl ether). $(C_2H_5)_3SiOC_2H_5$; m.w. 160.22; liq.; b.p. 153; i.w.; s.al.

silicane, hexamethyl di-. $Si_2(CH_3)_6$; m.w. 146.26; m.p. 12.5-14; b.p. 112.5.

silicane, hydroxy-. See silicol.

silicane, methyl- (methyl monosilane). CH_3SiH_3; m.w. 46.11; sp.gr. 0.62 $^{-57}$; m.p. −156.5; b.p. −56.8.

silicane, tetraethyl- (silicon tetraethyl). $(C_2H_5)_4Si$; m.w. 144.22; col. liq.; b.p. 153; i.w.

silicane, tetramethyl- (silicon tetramethyl; tetramethylsilicon). $(CH_3)_4Si$; m.w. 88.15; liq. ign. in air; b.p. 26-7 ^{761}; i.w.; s.al.

silicane, tribromo-. $SiHBr_3$; m.w. 268.91; m.p. 268.82; col. liq.; sp. gr. 2.7 ^{17}; m.p. <−60; b.p. 109; i.w.

silicane, trichloro-. $SiHCl_3$; m.w. 135.44; col. liq.; sp. gr. 1.35 ^{0}; m.p. −126.5; b.p. 31.8; i.w.

silicane, trichlorophenyl- (phenylsilicon trichloride). $C_6H_5SiCl_3$; m.w. 211.47; liq.; b.p. 197.

silicane, triethyl- (triethylsilicon hydride). $(C_2H_5)_3SiH$; m.w. 116.18; liq.; b.p. 107; i.w.

silicane, trifluoro-. $SiHF_3$; m.w. 86.07; col. gas; sp. gr. 3.86 ^{0} g/l; m.p. *ca.* −110; b.p. −80.2; i.w.; i.al.

silicane, triiodo-. $SiHI_3$; m.w. 409.83; red liq.; sp. gr. 3.314; m.p. 8; b.p. 220; i.w.

silicate. A salt of silicic acid, e.g. sodium silicate, Na_2SiO_3.

silicate cotton. See slag wool and rock wool.

siliceous. Containing silica or silicates.

silicic acid, meta-. H_2SiO_3; m.w. 78.08; amor. col.; s.g. 2.1-2.3; i.w.

silicic acid, ortho-. H_4SiO_4; m.w. 96.09; amor. col.; s.g. 1.57 ^{17}; s.w.

silico-oxalic acid. $Si_2O_2(OH)_2$; m.w. 122.14; wh. amor. powd.; i.w.

silicoheptyl alcohol. See silicol, triethyl-.

silicol, triethyl- (silicoheptyl alcohol). $(C_2H_5)_3SiOH$; m.w. 132.18; liq.; b.p. 154; i.w.; s.al.

silicol, triethyl, ethyl ether. See silicane, ethoxytriethyl-.

silicomanganese. An alloy of silicon, manganese, and carbon used in the making of low-carbon steels.

silicon. Si; at. wt. 28.06; cub. steel gray; s.g. 2.4; m.p. 1420; b.p. 2600; i.w.

silicon (amorphous). Si; at. wt. 28.06; amor. br.; s.g. 2.00; b.p. 2600; i.w.; an allotropic form of silicon.

silicon (graphitic). Si; at. wt. 28.06; blk. pl.; s.g. *ca.* 2.4; b.p. 2600; i.w., an allotropic form of silicon.

silicon boride, hexa-. SiB_6; m.w. 92.98; blk. cr.; s.g. 2.47; i.w.

silicon boride, tri-. SiB_3; m.w. 60.52; rhomb. blk.; s.g. 2.52; i.w.

silicon bromide, tetra-. $SiBr_4$; m.w. 347.72; col. fum. liq.; s.g. 2.812; m.p. 5; b.p. 153.

silicon bromide, tri-. Si_2Br_6; m.w. 535.62; rhomb. wh.; m.p. 65; b.p. 240.

silicon bromochloride, tri-. $SiBr_3Cl$; m.w. 303.27; col. liq.; s.g. 2.432; m.p. −39; b.p. 140.5.

silicon bromodichloride, di-. $SiBr_2Cl_2$; m.w. 258.81; col. liq.; m.p. <−60; b.p. 104.

silicon bromotrichloride. $SiBrCl_3$; m.w. 214.35; col. liq.; m.p. <−60; b.p. 80.

silicon bronze. An alloy of silicon, tin, and copper, used for making wire.

silicon carbide (carborundum; moissanite). SiC; m.w. 40.06; hex. col.; s.g. 3.17; m.p. >2700; b.p. subl. >2000; i.w.; an abrasive, one of the hardest substances known, made in the electric furnace from sand and coke; hardness 9.5.

silicon chloride, tetra-. $SiCl_4$; m.w. 169.89; col. fum. liq.; s.g. 1.483; m.p. −70; b.p. 59.6.

silicon chloride, tri-. Si_2Cl_6; m.w. 268.86; col. liq.; s.g. lq. 1.58°; m.p. −1; b.p. 139(145).

silicon chloride, tri-, phenyl-. See silicane, trichlorophenyl-.

silicon chlorohydrosulfide. $SiCl_2SH$; m.w. 167.50; col. liq.; s.g. 1.45; b.p. *ca.* 95.

silicon copper (copper silicide). An alloy of silicon and copper, made electrolytically.

silicon fluoride. See silicon fluoride, tetra-.

silicon fluoride, tetra-. SiF_4; m.w. 104.06; col. gas; s.g. 4.68 g/l; m.p. −77(−97); b.p. −65 ^{131}; s. abs. al.

silicon hydride (disilicane). Si_2H_6; m.w. 62.17; col. gas; s.g. lq. 0.686 $^{-25}$; m.p. −132.5; b.p. −14.5; s.w.; s.al.

silicon hydride (silicane). SiH_4; m.w. 32.09; col. gas; s.g. liq. 0.68 $^{-185}$; 1.44 g/l; m.p. −185; b.p. −111.8; i.w.

silicon hydride (tetrasilicane). Si_4H_{10}; m.w. 122.32; col. liq.; s.g. 0.79°; m.p. −93.5; b.p. 80.

silicon hydride (trisilicane). Si_3H_8; m.w. 92.24; col. liq.; s.g. 0.743 ^{0}; m.p. −117.4; b.p. 52.9.

silicon hydride, triethyl-. See silicane, triethyl-.

silicon iodide, di-. SiI_2; m.w. 281.90; d.w.

silicon iodide, hexa-. Si_2I_6; m.w. 817.64; hex. col.; m.p. 250.

silicon iodide, tetra-. SiI_4; m.w. 535.74; cub. col.; m.p. 120.5; b.p. 290.

silicon iodotrichloride. $SiICl_3$; m.w. 261.35; col. liq.; m.p. <−60; b.p. 113.5.

silicon oxide, di- (cristobalite). SiO_2; m.w. 60.06; cub. or tetr. col.; s.g. 2.32; m.p. 1713; b.p. 2230 (2590); i.w.

silicon oxide, di- (lechatelierite). SiO_2; m.w. 60.06; col.; s.g. 2.20; b.p. 2230 (2590); i.w.

silicon oxide, di- (quartz). SiO_2; m.w. 60.06; trig. col.; s.g. 2.651; m.p. <1470; b.p. 2230 (2590); i.w.

silicon oxide, di- (tridymite). SiO_2; m.w. 60.06; rhomb., col.; s.g. 2.26; m.p. 1670; b.p. 2230 (2590); i.w.

silicon oxide, di- (amorphous, opal). $SiO_2(+xH_2O)$; col. amor.; s.g. 2.1-2.3; m.p. >1600; i.w.

silicon oxide, triethyl-. See silicyl oxide, hexaethyl-.

silicon oxychloride. Si_2OCl_6; m.w. 284.86; col. liq.; m.p. −33; b.p. 137.

silicon steel. Steel containing 2.5% silicon and 0.4% carbon, of acid-resisting properties; a steel containing 5% silicon, hard, white, possessing high magnetic permeability, for use as transformer cores.

silicon sulfide, mono-. SiS; m.w. 60.12; yel. need.; s.g. 1.853 ^{16}; b.p. subl. 940 ^{20}.

silicon sulfobromide. $SiSBr_2$; m.w. 219.95; col. pl.; m.p. 93; b.p. 150 $^{12.5}$.

silicon sulfochloride. $SiSCl_2$; m.w. 131.03; col. pr.; m.p. 75; b.p. 92 $^{18.5}$.

silicon, tetraethyl-. See silicane, tetraethyl-.

silicon, tetramethyl-. See silicane, tetramethyl-.

siliconic acid, methane. See methane siliconic acid.

silicosis. Pulmonary occupational disease brought about by inhalation of fine, hard particles of dust such as silica.

silicotungstic acid (silicowolframic acid). $4H_2SiO_3 \cdot 12WO_3 \cdot 22H_2O$; wh. cryst.; s.w.; s.al.; a reagent for alkaloids, a basic dye mordant.

silicowolframic acid. See silicotungstic acid.

silicyl oxide, hexaethyl- (triethylsilicon oxide). $[(C_2H_5)_3Si]_2O$; m.w. 246.35; liq.; b.p. 231; i.w.; s.al.

silk, artificial. See rayon and rayon, acetate, cuprammonium, and viscose.

silk, thrown. See thrown silk.

sillimanite (fibrolite). A mineral, $Al_2O_3 \cdot SiO_2$; rhomb., gray, br., yelsh., grnsh.; sp.gr. 3.23-3.25; hardness 6.0-7.5; a refractory material used in chemical ware, spark plugs, etc.

silvan (2-methylfuran; sylvan). $C_4H_3OCH_3$; m.w. 82.05; col. liq.; i.w.; s.al.

Silvaz. An intermediate alloy, used in the manufacture of steel, which contains silicon, 40-45; vanadium 6-6.5; aluminum 6-6.5; zirconium 6-6.5; the rest being iron; used instead of aluminum as a final deoxidizer and to control grain size in the steel.

silver. Ag; at. wt. 107.880; cub. wh. met.; s.g. 10.5; m.p. 960.5; b.p. 1950; i.w.

silver acetate. $AgC_2H_3O_2$; m.w. 166.90; wh. pl.; s.g. 3.259 ^{16}; s.w.

silver arsenate, ortho-. Ag_3AsO_4; m.w. 462.57; cub. dk. red.; s.g. 6.657 ^{25}; i.w.

silver arsenite, ortho-. Ag_3AsO_3; m.w. 446.57; yel. powd.; m.p. 150 d.; s.w.; i.al.

silver benzoate. $AgC_7H_5O_2$; m.w. 228.92; wh. powd.; s.w.; s.al.

silver borate, tetra-. $Ag_2B_4O_7 \cdot 2H_2O$; m.w. 407.07; white; s.w.

silver bromate. $AgBrO_3$; m.w. 235.80; tetr. col.; s.g. 5.206; s.w.

silver bromide (bromyrite). AgBr; m.w. 187.80; cub. pa. yel.; s.g. 6.473 ^{25}; m.p. 434; b.p. d. 700; i.w.; i.al.

silver carbide. Ag_2C_2; m.w. 239.76; wh. amor.; m.p. exp.; s.w.; s.al.

silver carbonate. Ag_2CO_3; m.w. 275.76; yel. powd.; s.g. 6.077; m.p. 218 d.; i.w.; i.al.

silver chlorate. $AgClO_3$; m.w. 191.34; tetr. wh.; s.g. 4.430; m.p. 230; b.p. d. 270; s.w.; s.al.

silver chlorate, per-. $AgClO_4$; m.w. 207.34; wh. cr. deliq.; s.g. 2.806 ^{21}; m.p. d. 486; s.w.; s.al.

silver chloride (cerargyrite). AgCl; m.w. 143.34; cub. wh.; s.g. 5.56; m.p. 455; b.p. 1550; i.w.

silver chromate. Ag_2CrO_4; m.w. 331.77; monocl. red.; s.g. 5.625; s.w.

silver chromate, di-. $Ag_2Cr_2O_7$; m.w. 431.78; tricl. red.; s.g. 4.770; s.w.

silver citrate. $Ag_3C_6H_5O_7$; m.w. 512.68; wh. need.; s.w.

silver, coin. An alloy of silver 90% and copper 10% (U. S. A.).

silver cyanate. AgCNO; m.w. 149.89; col.; s.g. 4.00; s.w.

silver cyanide. AgCN; m.w. 133.89; hex. wh.; s.g. 3.95; m.p. 320 d.; i.w.

silver ferricyanide. $Ag_3Fe(CN)_6$; m.w. 535.53; orange; i.w.

silver ferrocyanide. $Ag_4Fe(CN)_6 \cdot H_2O$; m.w. 661.42; yel.; i.w.

silver fluoride. AgF; m.w. 126.88; cub. yel., deliq.; s.g. 5.852 $^{15.5}$; m.p. 435; s.w.

silver fluoride, sub-. Ag_2F; m.w. 234.76; hex. yel.; s.g. 8.57; m.p. 90 d.

silver fluosilicate. $Ag_2SiF_6 \cdot 2H_2O$; m.w. 393.85; col. cr. or wh. powd. deliq.; m.p. <100; s.w.

silver fulminate. $Ag_2C_2N_2O_2$; m.w. 299.78; sm. need.; s.w.

silver, German. See German silver.

silver glance. See argentite.

silver, horn. See horn silver.

silver iodate. $AgIO_3$; m.w. 282.80; rhomb. col.; s.g. 5.525; m.p. >200; s.w.

silver iodide (iodyrite). AgI; m.w. 234.80; hex. yel.; s.g. 5.67; m.p. d. 552; i.w.

silver lactate. $AgC_3H_5O_3 \cdot H_2O$; m.w. 214.93; wh. or sl. gray cr. powd.; s.w.

silver laurate. $AgC_{12}H_{23}O_2$; m.w. 307.06; m.p. 212.5; s.al.

silver manganate, per-. $AgMnO_4$; m.w. 226.81; monocl. dk. vlt.; s.w.

silver myristate. $AgC_{14}H_{27}O_2$; m.w. 335.09; m.p. 211; s.w.; s.al.

silver, native. The metal silver as it occurs naturally; cub., wh., tarn. to gray or blk.; sp. gr. 10.1-11.1; hardness 2.5-3.0.

silver nitrate. $AgNO_3$; m.w. 169.89; rhomb., col.; s.g. 4.352 [19]; m.p. 212; b.p. 444 d. s.w.; s. abs. al.

silver nitride (azide). AgN_3; m.w. 149.90; wh. prisms; m.p. exp. 252; i.w.

silver nitrite. $AgNO_2$; m.w. 153.89; rhomb. wh.; s.g. 4.453 [20]; m.p. d. 140; s.w.; i.al.

silver nitroprusside. $Ag_2Fe(CN)_5NO$; m.w. 431.65; lt. pink; i.w.; i.al.

silver oxalate. $Ag_2C_2O_4$; m.w. 303.76; col. cr.; s.g. 5.029 [4]; m.p. exp. 140; s.w.

silver oxide. Ag_2O; m.w. 231.76; cub. br.-blk.; s.g. 7.143 [16.6]; m.p. d. 300; s.w.

silver oxide, per-. Ag_2O_2; m.w. 247.76; cub. blk.; s.g. 7.44; m.p. d. >100; i.w.

silver palmitate. $AgC_{16}H_{31}O_2$; m.w. 363.12; m.p. 209; s.w.; s.al.

silver phosphate, meta-. $AgPO_3$; m.w. 186.90; wh. amor.; s.g. 6.37; m.p. *ca.* 482; i.w.

silver phosphate, ortho-. Ag_3PO_4; m.w. 418.66; cub. yel.; s.g. 6.370 [25]; m.p. 849; i.w.

silver phosphate, pyro-. $Ag_4P_2O_7$; m.w. 605.56; white; s.g. 5.306 [7.5]; m.p. 585; i.w.

silver potassium carbonate. $AgKCO_3$; m.w. 206.98; rect. pl.; s.g. 3.769.

silver potassium cyanide. $AgK(CN)_2$; m.w. 199.00; cub. col.; s.g. 2.36; s.w.; s. 85% al.

silver potassium nitrate. $KNO_3 \cdot AgNO_3$; m.w. 271.00; monocl.; s.g. 3.219; m.p. 125; s.w.

silver salicylate. AgC_6H_4OHCOO; m.w. 244.92; wh. to redsh. wh. cr.; s.w.; s.al.

silver selenide (naumannite). Ag_2Se; m.w. 294.96; cub. thin gray pl.; s.g. 8.0; m.p. 880; i.w.

silver sodium thiosulfate. $Ag_2S_2O_3 \cdot 2Na_2S_2O_3 \cdot 2H_2O$; m.w. 680.14; wh. to gray cr. powd.; s.w.

silver stearate. $AgC_{18}H_{35}O_2$; m.w. 391.15; m.p. 205; s.w.; s.al.

silver, sterling. An alloy of silver 925 parts, and base metal (usually copper) 75 parts.

silver sulfate. Ag_2SO_4; m.w. 311.82; rhomb. wh.; s.g. 5.45 [22]; m.p. 652; b.p. d. 1085; s.w.; i.al.

silver sulfide (acanthite). Ag_2S; m.w. 247.82; rhomb. gray-blk.; s.g. 7.326; m.p. 825; i.w.

silver sulfide (argentite). Ag_2S; m.w. 247.82; cub. blk.; s.g. 7.317; m.p. tr. 175; i.w.

silver sulfite. Ag_2SO_3; m.w. 295.82; wh. cr.; m.p. d. 100; s.w.

d-silver tartrate. $Ag_2C_4H_4O_6$; m.w. 363.79; scales; s.g. 3.432 [16]; s.w.

silver telluride (hessite). Ag_2Te; m.w. 343.26; cub. gray; s.g. 8.5; m.p. 955; i.w.

silver thallium nitrate. $AgNO_3 \cdot TlNO_3$; m.w. 436.29; wh. cr. powd.; m.p. 75; s.w.

silver thioantimonite (pyrargyrite). $3Ag_2S \cdot Sb_2S_3$; m.w. 1083.16; trig.; s.g. 5.76; m.p. >175; i.w.

silver thioarsenite (proustite). $3Ag_2S \cdot As_2S_3$; m.w. 989.50; trig.; s.g. 5.49; m.p. >175; i.w.

silver thiocyanate. AgCNS; m.w. 165.95; col. cr. or wh. curd; i.w.

silver thiosulfate. $Ag_2S_2O_3$; m.w. 327.88; wh.; s.w.

silver tungstate. Ag_2WO_4; m.w. 463.76; pa. yel. cr.; s.w.

simple decomposition. A chemical change in which a compound breaks down into two or more simpler substances as in the reaction,

$$2H_2O_2 \rightarrow 2H_2O + O_2.$$

simple distillation. See differential distillation.

simple harmonic motion (S.H.M.). A periodic motion in which the acceleration of a particle is always proportional to its distance, measured along its path, from a fixed point in its path, and whose acceleration is always in the direction of that point, e.g. the swinging of a pendulum thru a small arc.

simple linear polymer. See polymer, simple linear.

simple machine. Contrivance for the transfer of energy, and for increased convenience in the performance of work by virtue of its magnification of the applied force, e.g. wedge, screw, pulley.

simple proteins. Proteins which on hydrolysis, yield only amino acids or their derivatives, e.g. albumins.

simple replacement (substitution). A chemical reaction in which one element or radical replaces others in a compound, as in the reaction

$$Mg + 2HCl \rightarrow MgCl_2 + H_2.$$

sinapine. $C_{16}H_{23}O_5N$; m.w. 327.2; a glucoside occurring in mustard seeds.

sinapine, bisulfate. $C_{16}H_{24}NO_5HSO_4 \cdot 3H_2O$; m.w. 473.31; leaf. f.al.; m.p. 127, 186 dry; s.w.; s.al.

sinapine, thiocyanate. $C_{16}H_{24}NO_5SCN \cdot H_2O$; m.w. 386.28; pa. yel. need. f.w.; m.p. 178; s.w.; s.al.

sincaline. See choline.

sine. Function of an angle in a right-angled triangle, i.e. the ratio of side opposite an angle to the hypotenuse.

sine curve (sinusoida). Curve having each instantaneous ordinate equal to the maximum ordinate multiplied by the sine of the angle that the maximum ordinate forms with the horizontal; the type of wave curve which would be formed by the tracing of the tip of a pendulum or end of a tuning fork on a moving strip of paper, or the variation of e.m.f. in an alternating circuit.

Singapore damar gum. See gum, Singapore damar.

singlet linkage (odd electron linkage). Linkage involving the sharing of a single electron rather than a pair of electrons.

singular point. Point in magnetic field where field intensity or potential gradient is zero.

singular temperature. The temperature at which a property of a substance becomes discontinuous.

sinker marks. Longitudinal marks or streaks in circular knit rayon fabrics.

sinopis. A variety of red hematite; used as a pigment.

sintering. Formation of solid mass by heating without fusion.

sinusoida. See sine curve.

sinusoidal. Having a typical sine wave (q.v.) variation.

sinvosity. See turbulence.

Sipalin AOC. Dicyclohexanol adipate.

Sipalin AOM. Dimethylcyclohexyl adipate; b.p. 230 [12]; see adipic acid, methyl Hexalin ester.

Sipalin MOA. Ethyl methyl adipate.

Sipalin MOM. Dimethylcyclohexyl-methyl adipate.

siphon. A tube of inverted U-shape used for transferring liquids from a higher to a lower level.

Sipilite. A synthetic tar-acid resin.

sipylite. A natural rare earth mineral.

sisal. A fibrous substance obtained from several varieties of the *agave* plant, used as a binder twine and for baling generally.

sisal hemp. See sisal.

Sitol. Sodium salt of m-nitrobenzene sulfonic acid; cryst. powd.; s.w.; a mild oxidant for use in dyeing.

"606". See arsphenamine.

size-frequency analysis. Determination of the statistical distribution of the size of dispersed particles in colloidal systems.

sizing. In the woolen industry, the treatment of woolen and worsted warps with a "size," an adhesive or glue, to strengthen and smooth the fibers for weaving; similarly performed upon yarn and cloth to bind the threads together and to weight it. In paper making, the coating of paper to give it such properties as non-absorption of moisture, smoothness, sheen, etc. The treatment of plaster surfaces with a glue or similar material to prevent subsequent absorption of paint.

skatole (3-methylindole). C_9H_9N; m.w. 131.08; leaf. f. lgr.; m.p. 95; b.p. 266.2; s.al.

Skellysolve. A series of industrial petroleum naphtha solvents.

skin-effect. Concentration of current density toward the surface of a conductor of alternating current.

skinning. Formation of skin on surface of varnishes or paints left exposed, or in partially filled closed cans.

skip. A bucket mounted on wheels, for carrying the charge to a metallurgical furnace.

skiver. The grain side of a split sheepskin.

skiving. Removing of superfluous flesh from hides or separation of the grain.

Skraup synthesis. A method for preparing quinoline and those derivatives containing side chains in the benzene half of the molecule; in the case of quinoline itself glycerol, nitrobenzol, and sulfuric acid are heated together.

skunk oil. See oil, skunk.

slack wax (paraffin slack wax). A soft wax obtained from the pressing of paraffin distillate or wax oil, yellow in color containing oil.

slag. A siliceous product formed by the fusion of a flux with the refuse matter of ores.

slag wool. An artificial product of the blast furnace made by blowing air thru slag; gr.-yel. filaments; used in packing and insulation.

slaking. Disintegration of clay in water; the addition of water to quicklime (calcium oxide) with the formation of slacked lime (calcium hydroxide).

slashing. Dressing or sizing of yarns to prevent roughening during weaving.

slate flour. A grayish, amorphous solid; sp.gr. 2.6-3.3; used in manufacture of Portland cement, ceramics, abrasive soaps, building material, glass, and metal polishes; also as a filler for putty, paint, rubber, etc.

slide rule. A device used for such calculations as multiplication, division, raising to powers, extraction of roots, etc., consisting of adjacent sliding logarithmic scales, commonly about 10 inches long, and giving an accuracy of three significant figures.

slip. In motors, the speed difference between a rotating magnetic field and a rotor rotating in it; in ceramics, a mixture of an insoluble powder (e.g. clay) with a large volume of water to render it fluid, usually to be applied to the surface of articles before burning.

slip coefficient. Ratio of speed of slip to transverse velocity gradient in a fluid; viscosity coefficient divided by friction coefficient at a surface.

slip surface. Surface along which cracking or shearing takes place when a sol is subjected to a strong stress.

sliver. A fleecy strand of corded text fibers.

sludge. Organic sewage sediment; us as a fertilizer.

sludge acid. Spent sulfuric acid, a b product of petroleum refining.

slug. A unit of mass, equal to 32.17 l

slump point. Temperature at which column of wax melts, caves in, bends over.

slushing compound (slushing oil Petroleum grease compound with without a little added sodium d chromate; used as a temporary pr tective coating on metals.

slushing oil. See slushing compoun

smalt (azure blue, Saxony blue). blue amorphous powder containin cobalt, potash, and silica; a paint an varnish pigment; blueing agent.

smaltite. A mineral, $CoAs_3$; cub., ti wh. to lt. steel gray; sp.gr. 6.4-6.6 hardness 5.5-6.0.

smash. A place in a fabric where number of warp or filling yarns hav been broken.

smectic. Term applied to molecule tending to arrange themselves i parallel planes lying at regular dis tances from each other with the longi tudinal axis of each molecule more o less perpendicular to these planes, e.g ethyl paraazoxybenzoate.

smelting. Process in which metals ar extracted from ores by fusion.

smithsonite (calamine, dry bone). A mineral, $ZnCO_3$; hex. (trig.), wh.-yel or br.; rar. grn., bl.; sp.gr. 4.30-4.45 hardness 4.5-5.0.

smoke. Fine soot or carbon particle suspended in air, less than 0.1 micron in size; resulting from incomplete combustion of carbonaceous material such as coal, oil and tobacco.

smokeless powder. A pyroxylin or nitrocellulose explosive, producing no smoke upon ignition or explosion, unlike the old variety of gunpowder.

smudge oil. See oil, smudge.

Sn3 scale. A measure of the wetting characteristics of liquids.

snapping hazel. See hamamelis.

sneezing gas. See arsine, chlorodi-phenyl-.

Snell's law. The sines of the angle of incidence and the angle of refraction are in constant ratio, and lie in the same plane. (This fixed ratio is designated as the index of refraction.)

Snowflake Crystals. Sodium sesqui-carbonate.

soap. The product formed by the saponification or neutralization of fats, oils, waxes, rosins, or their acids with organic or inorganic bases; the metallic salt of a higher fatty acid.

soap, ammonia. See ammonium oleate.

soap, anhydrous real. Product of the reaction between fatty acids or rosin acid anhydrides and a combining weight of organic or inorganic bases, free of water and foreign matter.

soap bark (quillaja; murillo bark). Substance obtained from quillaja saponaria; used in medicine, in drinks, as an emulsifying agent and foam producer.

soap builder. Alkali or alkaline substance added to soaps to improve detergency, e.g. sodium silicate.

soap, built. Soap containing one or more builders.

soap, castile. A soap made from olive oil; used as detergent and antiseptic in textile finishing and washing.

soap, cold process. See cold process soap.

soap content. The quantity of anhydrous soap present.

soap, fish oil. A soap used for detergent purposes and in insecticides; made from fish oils such as herring, porpoise or salmon oils.

soap, green (soft soap). Yellowish-white to brownish yellow soap, formed

by saponification of linseed oil with potassium hydroxide; s.w.; s.al.; used as lubricant, detergent, disinfectant and antiseptic.

soap, nascent. See nascent soap.

soap powder. A mixture of powdered soap and a powdered builder, as soda ash.

soap, reversed. A soap having long chain cation, e.g. cetyl pyridinium bromide.

soap, soft. See soap, green.

soaping off. The process of removing unattached dye after dyeing.

soapstone. See talc.

dl-sobrerone. See pinole (dl).

sod oil. See oil, sod.

soda. See sodium carbonate.

soda ash. See sodium carbonate.

soda-lime. An intimate mixture of sodium hydroxide and calcium oxide; used in drying gases and for absorbing carbon dioxide in quantitative analysis.

soda lye. See sodium hydroxide.

soda-microcline. See anorthoclase.

soda, modified. See modified soda.

soda niter (Chile saltpeter). A mineral, $NaNO_3$; hex., col., wh., yelsh., gray, redsh., br.; sp.gr. 2.24-2.290.

sodalite. A mineral, $Na_4(AlCl)Al_3(SiO_4)_3$; cub., bl., wh., gr., redsh., or gray; sp.gr. 2.14-2.40; hardness 5.5-6.0.

sodamide. See sodium amide.

sodium. Na; at. wt. 22.997; sp.gr. 0.97; m.p. 97.5; b.p. 880; s.w.d. to $NaOH+H_2$; s.al.d.; a soft, bright silvery metal belonging to the alkali group, prepared by the electrolysis of the hydroxide; used in the reduction of organic compounds and in the preparation of peroxide and cyanide. It is never found free in nature, being distributed in many compounds, especially the chloride.

sodium acetate. $NaC_2H_3O_2$; m.w. 82.02; wh. powd.; s.g. 1.528; m.p. 324; s.w.; s.al.

sodium acetate. $NaC_2H_3O_2\cdot 3H_2O$; m.w. 136.07; monocl. col., effl.; s.g. 1.45; m.p. 58; 78; s.w.; s.al.

sodium acetate, acid. See sodium acetate, di-.

sodium acetate, di- (sodium acid acetate). $NaC_2H_3O_2\cdot CH_3COOH$; m.w. 142.05; wh. powd.; s.w.; used where it is convenient to have acetic acid available in solid form.

sodium alcohol sulfonated. See sodium lauryl sulfate.

sodium alkyl sulfate. A mixture of alkyl salts of high molecular weight, wh. powd. or fl.; m.p. 180-190; s.w.; s.al.; a detergent; a wetting, penetrating, and emulsifying agent; used in rug cleaning and in sprays, insecticides, and fungicides.

sodium aluminate. $NaAlO_2$; m.w. 81.97; amor. wh. powd.; m.p. 1650; s.w.; i.al.

sodium amide. $NaNH_2$; m.w. 39.02; olive grn.; m.p. 210; b.p. 400.

sodium ammonium phosphate (microcosmic salt) (stercorite). $NaNH_4HPO_4\cdot 4H_2O$; m.w. 209.13; monocl. col.; s.g. 1.574; m.p. 79 d.; s.w.; i.al.

sodium antimonate, meta-. $2NaSbO_3\cdot 7H_2O$; cub. col.; m.p. $-2H_2O$, 200; s.w.; s.al.

sodium antimonate, pyro-. $Na_2H_2Sb_2O_7\cdot H_2O$; m.w. 421.55; tetr. col.; s.w.; s.al.

sodium antimoniate. See sodium antimonate, meta-.

sodium arsenate. See sodium arsenate, ortho-.

sodium arsenate, ortho-. $Na_3AsO_4\cdot 12H_2O$; m.w. 424.11; trig. col.; s.g. 1.759; m.p. 86.3; s.w.; s.al.

sodium arsenite, ortho-, dibasic. Na_2HAsO_3; m.w. 169.93; col.; s.g. 1.87; s.w.; s.al.

sodium arsenate, ortho-, dibasic. $Na_2HAsO_4\cdot 7H_2O$; m.w. 312.04; monocl. col.; s.g. 1.871; m.p. 57; b.p. $-7H_2O$, 100; s.w.; s.al.

sodium arsenate, ortho-, dibasic. $Na_2HAsO_4\cdot 12H_2O$; m.w. 402.12; monocl. col.; s.g. 1.72; m.p. 28; b.p. $-12H_2O$, 100; s.w.; s.al.

sodium arsenate, ortho-, monobasic. $NaH_2AsO_4\cdot H_2O$; m.w. 181.96; rhomb. or monocl. col.; s.g. (monocl.) 2.53; s.w.

sodium arsenite. See sodium arsenite, ortho-, dibasic.

sodium aurosulfide. $NaAuS\cdot 4H_2O$; m.w. 324.32; monocl.; s.w.; s.al.

sodium benzoate. $NaC_7H_5O_2$; m.w. 144.04; col. cr.; s.w.; s.al.

sodium borate. See sodium borate, meta- or tetra-.

sodium borate, meta-. $NaBO_2$; m.w. 65.82, hex. pr., col.; m.p. 966; b.p. >1400; s.w.

sodium borate, meta-. $NaBO_2\cdot 2H_2O$; m.w. 101.85; monocl. col.; m.p. 57; s.w.

sodium borate, per-. $NaBO_3\cdot H_2O$; m.w. 99.83; m.p. d. 40; s.w.

sodium borate, per-. $NaBO_3\cdot 4H_2O$; m.w. 153.88; monocl. col.; s.w.

sodium borate, tetra-. $Na_2B_4O_7$; m.w. 201.27; s.g. 2.367; m.p. 741; s.w.; i.al.

sodium borate, tetra-. $Na_2B_4O_7\cdot 5H_2O$; m.w. 291.35; cub.; s.g. 1.815; s.w.

sodium borate, tetra- (borax). $Na_2B_4O_7\cdot 10H_2O$; m.w. 381.43; monocl. col.; s.g. 1.73; m.p. 75; s.w.; s.al.

sodium bromate. $NaBrO_3$; m.w. 150.91; cub. col.; s.g. 3.339 $^{17.5}$; m.p. 381; b.p. 109; s.w.; i.al.

sodium bromide. NaBr; m.w. 102.91; cub. col.; s.g. 3.205; m.p. 755; b.p. 1390; s.w.; s.al.

sodium bromide. $NaBr\cdot 2H_2O$; m.w. 138.94; monocl. col.; s.g. 2.176; m.p. $-2H_2O$, 51; s.w.; s.al.

sodium 2-bromo-4-phenyl phenate. See sodium 2-bromo-p-xenate.

sodium bromoplatinate. $Na_2PtBr_6\cdot 6H_2O$; m.w. 828.81; tricl. dk. red.; s.g. 3.323; s.w.; s.al.

sodium 2-bromo-p-xenate (sodium-2-bromo-4-phenyl phenate). $C_{12}H_8BrONa$; m.w. 271.0; amber colored liq.; sp.gr. 1.20 at $\frac{25}{4}$; s.w.; s.al.; a germicide.

sodium cacodylate. $(CH_3)_2AsOONa\cdot 3H_2O$; m.w. 214.02; wh. amor. powd. pois.; s.w.; s.al.

sodium carbide. Na_2C_2; m.w. 69.99; powd.; s.g. 1.575 ^{15}; b.p. 700.

sodium carbonate. Na_2CO_3; m.w. 105.99; wh. powd., hyg.; s.g. 2.533; m.p. 851; s.w.; i.al.

sodium carbonate (thermonatrite). $Na_2CO_3\cdot H_2O$; m.w. 124.01; rhomb. col.; s.g. 1.55; m.p. $-H_2O$, 100; s.w.; i.al.

sodium carbonate (washing soda). $Na_2CO_3\cdot 10H_2O$; m.w. 286.15; monocl. wh.; s.g. 1.46; m.p. $-5H_2O$, 34; s.w.; i.al.

sodium carbonate, acid (baking soda). $NaHCO_3$; m.w. 84.00; monocl. wh.; s.g. 2.20; m.p. $-CO_2$, 270; s.w.; i.al.

sodium carbonate, bi-. See sodium carbonate, acid.

sodium carbonate, sesqui-. $Na_4H_2(CO_3)_3\cdot 3H_2O$; m.w. 328.05; monocl.; s.g. 2.112; s.w.

sodium chlorate. $NaClO_3$; m.w. 106.45; cub. or trig. col.; s.g. 2.490 ^{16}; m.p. 248; s.w.; s.al.

sodium chlorate, per-. $NaClO_4$; m.w. 122.45; rhomb.; m.p. 482 d.; s.w.; s.al.

sodium chlorate, per-. $NaClO_4\cdot H_2O$; m.w. 140.47; rhbdr. col. deliq.; s.g. 2.02; s.w.; s.al.

sodium chloride (common salt; halite). NaCl; m.w. 58.45; cub. col.; s.g. 2.163; m.p. 804; b.p. 1413; s.w.; s.al.

sodium chlorite, hypo-. NaClO; m.w. 74.45; in soln only; s.w.

sodium chlorite, hypo-. $NaClO\cdot 2\frac{1}{2}H_2O$; m.w. 119.49; col.; m.p. 57.5; s.w.

sodium chloroaurate. $NaAuCl_4\cdot 2H_2O$; m.w. 398.06; yel. cr.; s.w.; s.abs.al.

sodium chloroiridate. $Na_3IrCl_6\cdot 6H_2O$; m.w. 559.93; tricl. dull red; s.w.; s.al.

sodium chloropalladite. $Na_2PdCl_4\cdot 3H_2O$; m.w. 348.57; br. deliq. salt.; s.w.; s.al.

sodium 2-chloro-4-phenyl phenate. See sodium 2-chloro-p-xenate.

sodium 6-chloro-2-phenyl phenate. See sodium 6-chloro-o-xenate.

sodium chloroplatinate. $Na_2PtCl_6\cdot 6H_2O$; m.w. 562.06; tricl. yel.-red; s.g. 2.50; m.p. $-6H_2O$, 100; s.w.; s.al.

sodium chloroplatinite. $Na_2PtCl_4\cdot 4H_2O$; m.w. 455.11; red; m.p. d. 100; s.w.

sodium chlororhodate. Na_3RhCl_6; m.w. 384.64; tricl. red; s.w.

sodium chlororhodate. $Na_3RhCl_6\cdot 12H_2O$; m.w. 600.83; oct. garnet-red.; s.w.; i.al.

sodium 6-chloro-o-xenate (sodium 6-chloro-2-phenyl phenate). $C_6H_4\cdot C_6H_3ClONa\cdot 2H_2O$; m.w. 263.6; light colored soln; s.w.; s.al.; a germicide.

sodium 2-chloro-p-xenate (sodium 2-chloro-4-phenyl phenate). $C_{12}H_8ClONa$; m.w. 226.5; light amber-colored liq.; sp.gr. 1.15 at $\frac{25}{4}$; s.w.; a germicide.

sodium choleate (sodium choleinate). Dried, purified oxgall; yellowish white powd.; s.w.; s.al.; used in ink industry.

sodium choleinate. See sodium choleate.

sodium chromate. $Na_2CrO_4\cdot 10H_2O$; m.w. 342.16; monocl. yel. deliq.; s.g. 1.483; m.p. 19.92; s.w.; s.al.

sodium chromate, bi-. See sodium chromate, di-.

sodium chromate, di-. $Na_2Cr_2O_7\cdot 2H_2O$; m.w. 298.05; monocl. red., deliq.; s.g. 2.52 ^{15}; m.p. $-2H_2O$ 100, anh. 320; s.w.; i.al.

sodium chromate, per-. Na_3CrO_8; m.w. 249.00; or. pl.; m.p. d. 115; s.w.; i.al.

sodium cinnamate. $NaC_6H_5CH{:}CH\text{-}COO$; m.w. 170.05; wh. cr. powd.; s.w.; s. 90% al.

sodium citrate. $2Na_3C_6H_5O_7\cdot 11H_2O$; m.w. 714.23; rhomb. wh.; s.g. 1.857 $^{22.5}$; m.p. $-11H_2O$, 150; s.w.; s.al.

sodium copper cyanide. $NaCu(CN)_2$; m.w. 138.58; col.; s.g. 1.01; m.p. d. 100; s.w.

sodium cyanide. NaCN; m.w. 49.01; cub. col., deliq.; m.p. 563.7; b.p. 1496; s.w.; s.al.

sodium diacetate. See sodium acetate, di-.

sodium dithionate. $Na_2S_2O_6\cdot 2H_2O$; m.w. 242.15; rhomb.; s.g. 2.189; s.w.; i.al.

sodium ethyl oxalacetate. $C_2H_5OOC\cdot C(ONa)\cdot CH\cdot C\cdot OOC_2H_5$; m.w. 210.09; light yel. powd.; used as intermediate in dye manufacture.

sodium ethyl sulfate. $NaC_2H_5SO_4\cdot H_2O$; m.w. 166.11; wh., v. hyg. cr.; s.w.; s.al.

sodium ethyl xanthate. $C_2H_5O\cdot CS{:}SNa$; m.w. 144.16; pale green powd.; s.w.; s.al.; a mineral ore flotation agent.

sodium feldspar. See albite.

sodium ferric oxalate. $2Na_3Fe(C_2O_4)_3\cdot 10H_2O$; m.w. 957.82; monocl. grn.; s.g. 1.973 $^{17.5}$; m.p. $-4H_2O$, 100; b.p. $-10H_2O$, 200; s.w.

sodium ferricyanide. $Na_3Fe(CN)_6\cdot H_2O$; m.w. 298.89; red. deliq.; s.w.; i.al.

sodium ferrite. $Na_2Fe_2O_4$; m.w. 221.67.

sodium ferrocyanide. $Na_4Fe(CN)_6\cdot 10H_2O$; m.w. 484.03; monocl. yel.; s.g. 1.458; s.w.; i.al.

sodium fluoride (villiaumite). NaF; m.w. 42.00; tetr. or cub. col.; s.g. 2.79; m.p. 980; b.p. 1700; s.w.; s.al.

sodium fluoride, bi-. See sodium fluoride, di-.

sodium fluoride, di-. $NaHF_2$; m.w. 62.00; rhbdr. col. or wh. cr. powd.; s.w.

sodium fluosilicate. Na_2SiF_6; m.w. 188.05; hex. col.; s.g. 2.755; s.w.; i.al.

sodium formate. $NaCHO_2$; m.w. 68.00; monocl. col., deliq.; s.g. 1.92; m.p. 253; s.w.; s.al.

sodium furacrylate. $C_4H_3OCHCH\text{-}COONa$; m.w. 160.03; lt. br. powd.; s.g. 1.919; s.w.; s.al.

sodium germanate, meta-. Na_2GeO_3; m.w. 166.59; monocl. wh. deliq.; s.g. 3.31 ^{22}; m.p. 1078.

sodium germanate, meta-. $Na_2GeO_3\cdot 7H_2O$; m.w. 292.70; rhombic col.; m.p. 83; s.w.

sodium glyceroleate. See glycerol, 1-sodium derivative.

sodium glycerophosphate. $Na_2C_3H_7PO_6\cdot H_2O$; m.w. 234.08; yelsh., viscid liq.; wh. cr. or powd.; s.w.; s.al.

sodium glycerophosphate. $Na_2C_3H_5(OH)_2PO_4\cdot 5\frac{1}{2}H_2O$; m.w. 315.15; wh. odorl. plates or scales, or powd.; b.p. d. >130; s.w.; i.al.

sodium hydride. NaH; m.w. 24.00; silv. need.; s.g. 0.92.

sodium hydrosulfide. NaHS; m.w. 56.06; rhomb. col.; s.w.; s.al.

sodium hydrosulfide. $NaHS\cdot 2H_2O$; m.w. 92.10; need. deliq.; s.w.; s.al.

sodium hydrosulfite. $NaHSO_2$; m.w. 88.06; s.w.; s.al.; a name commonly applied erroneously to sodium hyposulfite, $Na_2S_2O_4\cdot 2H_2O$, (q.v.).

sodium iodate. $NaIO_3$; m.w. 197.92; rhomb.; s.g. 4.277; s.w.; i.al.

sodium iodide. NaI; m.w. 149.92; cub. col.; s.g. 3.667; m.p. 651; b.p. 1300; s.w.; s.al.

sodium iodide. $NaI\cdot 2H_2O$; m.w. 185.95; monocl. col.; s.g. 2.448; s.w.

sodium lactate. $NaC_3H_5O_3$; m.w. 112.04; col. or yelsh. liq.; s.w.; s.al.

sodium laurate. $C_{11}H_{23}COONa$; m.w. 222.19; light tan paste; used in manufacture of textile soaps, shampoos, etc.

sodium linoleate. $C_{17}H_{31}COONa$; m.w. 280.23; a tan paste; used in manufacture of soaps and detergents.

sodium lauryl sulfate. A soap substitute which does not leave a "ring"; used largely in textile field.

sodium magnesium tartrate. $Na_2Mg(C_4H_4O_6)_2\cdot 10H_2O$; m.w. 546.53; wh. powd.; s.w.

sodium manganate. $Na_2MnO_4\cdot 10H_2O$; m.w. 345.08; monocl. grn.; s.w.

sodium manganate, per-. $NaMnO_4$; m.w. 141.93; red; s.w.

sodium manganate, per-. $NaMnO_4\cdot 3H_2O$; m.w. 195.97; purp. deliq., cr.; s.w.

sodium mercaptide. See ethanethiol, sodium derivative.

sodium metanilate. $NaO_3S(C_6H_4)(NH_2)$; m.w. 195.11; solid; used in manufacture of intermediates, dyestuffs.

sodium methyl arsenate. $CH_3AsO(NaO)_2\cdot 6H_2O$; m.w. 292.04; wh. cr. powd.; m.p. 130-140; s.w.; s.al.

sodium methylate. $CH_3ONa\cdot 2CH_3OH$; m.w. 118.08; wh. powd.; s.w. d.

sodium methyl sulfate. $NaCH_3SO_4\cdot H_2O$; m.w. 152.10; col. hyg. cr.; s.w.; s.al.

sodium molybdate. Na_2MoO_4; m.w. 205.99; purple; s.g. liq. 2.59; m.p. 687.

sodium molybdate. $Na_2MoO_4\cdot 2H_2O$; m.w. 242.03; rhbdr. wh.; m.p. 687; s.w.

sodium molybdate. $Na_2MoO_4\cdot 22H_2O$; m.w. 602.34; wh. tetramorph.; m.p. tr. 445, 592.

sodium molybdate, deka-. $Na_2Mo_{10}O_{31}\cdot 12H_2O$; m.w. 1718.18; cryst.; s.w.

sodium molybdate, di-. $Na_2Mo_2O_7$; m.w. 349.99; need.; m.p. 612; s.w.

sodium naphthenate. A white paste used in the manufacture of driers and as a detergent.

sodium molybdate, octo-. $Na_2Mo_8O_{25}\cdot 4H_2O$; m.w. 1286.06; powd.; i.w.

sodium molybdate, para-. $Na_6Mo_7O_{24}\cdot 22H_2O$; m.w. 1590.33; monocl. col.; s.w.

sodium molybdate, tetra-. $Na_2Mo_4O_{13}\cdot 6H_2O$; m.w. 746.09; s.w.

sodium molybdate, tri-. $Na_2Mo_3O_{10}\cdot 7H_2O$; m.w. 620.10; need.; s.w.

sodium naphthionate (sodium α-naphthylamine sulfonate). $NaC_{10}H_6(NH_2)SO_3\cdot 4H_2O$; wh. cryst.; s.w.

sodium β-naphthol disulfonate. See 2-naphthol, 3, 6-disulfonic acid, sodium salt.

sodium α-naphthylamine sulfonate. See sodium naphthionate.

sodium nitrate (soda niter). $NaNO_3$; m.w. 85.01; trig. col.; s.g. 2.257; m.p. 308; b.p. d. 380; s.w.; s.al.

sodium nitride. Na_3N; m.w. 83.00; dk. gray; m.p. d. 300.

sodium nitride (azide). NaN_3; m.w. 65.02; col. hex.; s.g. 1.846; s.w.; s.al.

sodium nitrite. $NaNO_2$; m.w. 69.01; rhomb. col., hyg.; s.g. 2.168; m.p. 271; b.p. d. 320; s.w.; s.al.; finds extensive use in diazotization in dyeing and dye making, and in pickling meats.

sodium nitroprusside. $Na_2Fe(CN)_5NO \cdot 2H_2O$; m.w. 297.91; rhomb. red; s.g. 1.72; s.w.; s.al.

sodium oenanthate. $NaCH_3(CH_2)_5COO$; m.w. 152.10; wh. cr. powd. or leaf.; s.w.; s.al.

sodium oleate (eunatrol). $NaC_{18}H_{33}O_2$; m.w. 304.27; yel. amorp. granules; m.p. 235; s.w.; s.al.; used in waterproofing textiles and in medicine.

sodium oxalate. $Na_2C_2O_4$; m.w. 133.99; col. cr.; s.w.

sodium oxalate, acid. $NaHC_2O_4 \cdot H_2O$; m.w. 130.02; monocl.; s.w.

sodium oxide. Na_2O; m.w. 61.99; gray deliq.; s.g. 2.27.

sodium oxide, per-. Na_2O_2; m.w. 77.99; yel. powd.; s.g. 2.805; s.w.; i.al.

sodium phenate. NaC_6H_5O; m.w. 116.04; wh. deliq. cr.; s.w.; s.al.

sodium phenate, 2, 4, 5, 6 tetrachloro-. C_6HCl_4ONa; m.w. 253.6; light tan sol.; s.w.; s.al.; a fungicide for wood products.

sodium phenate, 2, 4, 5 trichloro-. $C_6H_2Cl_3ONa \cdot 4H_2O$; m.w. 291.5; light-colored solid; s.w.; s.al.; a fungicide.

sodium phenolsulfonate. $C_6H_4OH \cdot SO_3Na \cdot 2H_2O$; m.w. 232.13; col. cr. or gran., sl. effl.; s.w.; s.al.

sodium ortho- phenyl phenate. See sodium ortho- xenate.

sodium phospate, di-. See sodium phosphate, ortho-, dibasic.

sodium phosphate, hexameta- (Calgon). See sodium phosphate, meta-.

sodium hydroxide. NaOH; m.w. 40.00; wh. deliq.; sp.gr. 2.130; m.p. 318.4; b.p. 1390; s.w.; s.al.; an alkali used in the manufacture of sodium and its salts, soap, chemical pulp, dyes, glass, textiles, ceramics, refining of petroleum, and as a laboratory reagent.

sodium phosphate, hypo-. $Na_4P_2O_6 \cdot 10H_2O$; m.w. 430.18; monocl.; s.g. 1.832; s.w.

sodium phosphate, hypo-, acid. $NaHPO_3 \cdot 3H_2O$; m.w. 157.07; monocl. col.; s.g. 1.849; s.w.; i.al.

sodium phosphate, meta-. $NaPO_3$; m.w. 102.02; amor. col., hyg.; s.g. 2.476; m.p. 616 d.; s.w.

sodium phosphate, mono-. See sodium phosphate, ortho-, monobasic.

sodium phosphate, ortho-, dibasic. $Na_2HPO_4 \cdot 12H_2O$; m.w. 358.21; rhomb. or monocl. col. effl.; s.g. 1.52; m.p. 34.6; b.p. $-12H_2O$, 100; s.w.; i.al.

sodium phosphate, ortho-, monobasic. $NaH_2PO_4 \cdot 12H_2O$; m.w. 138.05; rhomb. col.; s.g. 2.040; m.p. d. 200; s.w.; i.al.

sodium phosphate, ortho-, tribasic. $Na_3PO_4 \cdot 12H_2O$; m.w. 380.20; trig. col.; s.g. 1.62; m.p. d. 73.4; b.p. $-12H_2O$, 100; s.w.

sodium phosphate, pyro-. $Na_4P_2O_7 \cdot 10H_2O$; m.w. 446.18; monocl. col.; s.g. 1.82; m.p. anh. 988; s.w.; i.al.

sodium phosphate, pyro-, acid. See sodium phosphate, pyro-, dibasic.

sodium phosphate, pyro-, dibasic. $Na_2H_2P_2O_7 \cdot 6H_2O$; m.w. 330.14; monocl.; s.g. 1.848; s.w. d.

sodium phosphate, tri-. See sodium phosphate, ortho-, tribasic.

sodium phosphide. Na_3P; m.w. 100.01; red; s.w. d. to PH_3.

sodium phosphite, hypo-, monobasic. $NaH_2PO_2 \cdot H_2O$; m.w. 106.05; monocl. col., deliq.; s.w.; s.al.

sodium phosphite, ortho-. $Na_2HPO_3 \cdot 5H_2O$; m.w. 216.10; rhomb. wh., deliq.; m.p. 53; s.w.; i.al.

sodium phosphite, ortho-, acid. $2NaH_2PO_3 \cdot 5H_2O$; m.w. 298.14; monocl.; m.p. 42; b.p. $-5H_2O$, 100; s.w.

sodium phthalate. $C_6H_4(COONa)_2$ (1:2); m.w. 210.03; wh. powd.; s.w.

sodium picramate. $C_6H_4O_3N_2Na$; colorless crystalline compound used in the manufacture of intermediates and organic chemicals.

sodium platinate. $Na_2PtO_3 \cdot 3H_2O$; m.w. 343.27; yel.; m.p. $-3H_2O$, 150-70; s.w.; i.al.

sodium plumbate. $Na_2PbO_3 \cdot 3H_2O$; m.w. 355.26; lt. yel., fused, hyg. lumps.

sodium potassium carbonate. $NaKCO_3 \cdot 6H_2O$; m.w. 230.19; monocl.; s.g. 1.633; m.p. $-6H_2O$, 100; s.w.

sodium propionate. $NaC_3H_5O_2$; m.w. 96.04; wh. gran. powd.; s.w.; s.al.

sodium ricinoleate. $C_{17}H_{32}COONa$; m.w. 303.26; a white paste used as an emulsifying agent and in the making of special soaps.

sodium ruthenate, per-. $NaRuO_4 \cdot H_2O$; m.w. 206.71; blk. cr.; m.p. d. 440 vac.; s.w.

sodium saccharate. $NaC_{12}H_{21}O_{11}$; m.w. 364.16; wh. powd.; s.w.

sodium salicylate. $NaC_7H_5O_3$; m.w. 160.04; wh. cr. powd.; s.w.; s.al.

sodium selenate. Na_2SeO_4; m.w. 189.19; rhomb. col.; s.g. 3.098; s.w.

sodium selenate. $Na_2SeO_4 \cdot 10H_2O$; m.w. 369.35; wh. cr.; s.w.

sodium selenide. Na_2Se; m.w. 125.19; deliq. cr.; m.p. >875.

sodium selenite. Na_2SeO_3; m.w. 173.19; wh. cr.; s.w.; i.al.

sodium silicate. Na_2SiO_3; m.w. 122.05; monocl. col.; s.g. 2.4; m.p. 1088; s.w.; i.al.

sodium silicate. $Na_2SiO_3 \cdot 9H_2O$; m.w. 284.19; m.p. 48; b.p. $-6H_2O$, 100; s.w.

sodium silicate, di- (water glass). $Na_2Si_4O_9$; m.w. 302.23; amor. col., deliq.; s.w.; i.al.

sodium silicate, meta-. See sodium silicate.

sodium silicate, sesqui-. $3Na_2O \cdot 2SiO_2 \cdot 11H_2O$; white granular powd.; m.p. 90-5; used in heavy duty cleaning and cleaning compounds.

sodium silicododecatungstate. $Na_4[SiW_{12}O_{40}]20H_2O$; m.w. 3328.36; col. tricl.; m.p. $-7H_2O$, 100; s.w.; s.al.

sodium silicofluoride. See sodium fluosilicate.

sodium stannate. $Na_2SnO_3 \cdot 3H_2O$; m.w. 266.74; hex. col.; s.w.; i.al.

sodium stannate, meta-. $Na_2Sn_5O_{11} \cdot 4H_2O$; m.w. 887.56; cr. powd.; s.w.; i.al.

sodium stearate. $NaC_{18}H_{35}O_2$; m.w. 306.27; wh. powd., fatty odor; s.w.; s.al.; a waterproofing agent; used also in medicine.

sodium succinate. $Na_2C_4H_4O_4 \cdot 6H_2O$; m.w. 270.12; wh. gran. or powd.; s.w.; s.al.

sodium sulfanilate. $C_6H_4(NH_2)SO_3ONa \cdot 2H_2O$; m.w. 231.14; wh., lust. cr. leaf; s.w.

sodium sulfate. Na_2SO_4; m.w. 142.05; rhomb.; s.g. 2.698; m.p. tr.-mcl. 100; s.w.; i.al.

sodium sulfate. Na_2SO_4; m.w. 142.05; monocl. col.; m.p. tr.-hex. 500; s.w.

sodium sulfate. Na_2SO_4; m.w. 142.05; hex. col.; m.p. 884; s.w.

sodium sulfate. $Na_2SO_4 \cdot 7H_2O$; m.w. 268.16; rhomb. or tetr.; s.w.

sodium sulfate (Glauber's salt). $Na_2SO_4 \cdot 10H_2O$; m.w. 322.21; monocl. col. eff.; s.g. 1.464; m.p. d. 32.4; s.w.; i.al.

sodium sulfate (mirabilite). $Na_2SO_4 \cdot 10H_2O$; m.w. 322.21; s.g. 1.48.

sodium sulfate, acid. $NaHSO_4$; m.w. 120.06; tricl. col.; s.g. 2.742; m.p. >315; s.w.

sodium sulfate, acid. $NaHSO_4 \cdot H_2O$; m.w. 138.08; monocl. col.; m.p. 300; s.w.; i.al.

sodium sulfate, bi-. See sodium sulfate, acid.

sodium sulfate, per-. $Na_2S_2O_8$; m.w. 238.11; wh. cr. powd.; s.w.

sodium sulfate, pyro-. $Na_2S_2O_7$; m.w. 222.11; wh. cr.; s.g. 2.658 ^{25}; m.p. 400.9; b.p. d. 460.

sodium sulfhydrate. See sodium hydrosulfide.

sodium sulfide. See sodium sulfide, mono-.

sodium sulfide, mono-. Na_2S; m.w. 78.05; amor. yel.-pink; s.g. 1.856; m.p. *ca.* 920; s.w.; s.al.

sodium sulfide, mono-. $Na_2S \cdot 9H_2O$; m.w. 240.19; tetr. col., deliq.; s.g. 2.471; s.w.; s.al.

sodium sulfide, penta-. Na_2S_5; m.w. 206.29; yel.; m.p. 251.8; s.w.; s.al.

sodium sulfite. Na_2SO_3; m.w. 126.05; hex. pr. or wh. powd.; s.g. 2.633 ^{15}; s.w.; s.al.

sodium sulfite. $Na_2SO_3 \cdot 7H_2O$; m.w. 252.16; monocl. col.; s.g. 1.561; m.p. $-7H_2O$, 150; s.w.; i.al.

sodium sulfite, acid. $NaHSO_3$; m.w. 104.06; monocl. wh.; s.g. 1.48; s.w.; i.al.

sodium sulfite, bi-. See sodium sulfite, acid.

sodium sulfite, hypo-. $Na_2S_2O_4 \cdot 2H_2O$; m.w. 210.15; monocl.(?) col. cr. or yel.-wh. powd.; s.w.; i.al.

sodium sulfite, pyro- (metabisulfite). $Na_2S_2O_5$; m.w. 190.11; col. pr.; m.p. d. >150; s.w.; i.al.

sodium sulfocyanide. See sodium thiocyanate.

sodium sulfonate, green. Sodium salts of green acids; used as a wetting agent.

sodium sulfonate, mahogany. Sodium salts of mahogany acids; used as Twitchell reagent.

sodium sulfoxylate formaldehyde. $NaHSO_2 \cdot CH_2O \cdot 2H_2O$; m.w. 154.11; rhomb. cr.; m.p. 64; s.w.; s.al.

sodium tartrate. $Na_2C_4H_4O_6 \cdot 2H_2O$; m.w. 230.06; rhomb. col.; s.g. 1.818; s.w.; i.al.

sodium tartrate, acid. $NaHC_4H_4O_6 \cdot H_2O$; m.w. 190.05; wh. cr. powd.; s.w.; s.al.

sodium thioantimonate (Schlippe's salt). $Na_3SbS_4 \cdot 9H_2O$; m.w. 481.13; cub. pa. yel.; s.g. 1.839; s.w.; i.al.

sodium thioarsenate. $2Na_2AsS_4 \cdot 15H_2O$; m.w. 814.56; monocl. yel.; s.w.; i.al.

sodium thiocarbonate. $Na_2CS_3 \cdot H_2O$; m.w. 172.19; yel.; s.w.

sodium thiocyanate. NaCNS; m.w. 81.07; rhomb. col. pois., deliq.; m.p. 287; s.w.; s.al.

sodium thioethylate. See ethanethiol, sodium derivative.

sodium thioplatinate. $Na_4Pt_2S_6$; m.w. 870.04; rhomb. copper-red.

sodium thiosulfate (hypo). $Na_2S_2O_3 \cdot 5H_2O$; m.w. 248.19; monocl. col., effl.; s.g. 1.685; m.p. d. 48.0; s.w.; i.al.

sodium tungstate. $Na_2WO_4 \cdot 2H_2O$; m.w. 330.03; rhomb. col.; s.g. 3.23-.25; m.p. anh. 698; b.p. $-2H_2O$, 100; s.w.; i.al.

sodium tungstate, para-. $Na_6W_7O_{24} \cdot 16H_2O$; m.w. 2098.23; tricl.; m.p. $-16H_2O$, 300; s.w.

sodium undecylate. $C_{10}H_{21}COONa$; m.w. 220.14; a white paste used as an emulsifying agent and in the manufacture of soaps.

sodium uranate. Na_2UO_4; m.w. 348.13; yel. powd.; i.w.

sodium uranate, per-. $Na_2UO_4 \cdot 5H_2O$; m.w. 454.21; red cr.; m.p. d. 100.

sodium urate. $Na_2C_5H_2O_3N_4 \cdot H_2O$; m.w. 230.06; hard, cr. nodules or wh. gran. powd.; s.w.; s. 90% al.

sodium urate, acid. $NaHC_5H_2N_4O_3$; m.w. 190.05; wh. gran. powd.; s.w.

sodium valerate. $NaC_5H_9O_2$; m.w. 124.07; col. cr. or wh. deliq. mass; m.p. 140; s.w.; s.al.

sodium vanadate, meta-. $NaVO_3$; m.w. 121.95; col. monocl. pr.; m.p. 630.

sodium vanadate, ortho-. Na_3VO_4; m.w. 183.94; col. hex. pr.; m.p. 866; s.w.; i.al.

sodium vanadate, ortho-. $Na_3VO_4 \cdot 16H_2O$; m.w. 472.19; cr.; s.w.; i.al.

sodium vanadate, pyro-. $Na_4V_2O_7 \cdot 8H_2O$; m.w. 404.02; col. hex. pl m.p. 654; s.w.; i.al.

sodium xanthate. $NaS \cdot CS \cdot OC_2H$ m.w. 144.16; amorphous solid; s.al used in manufacture of synthet indigo and as a flotation agent.

sodium xanthogenate. $SC(OC_2H_5)SNa$ m.w. 144.16; yelsh. powd.; s.w.; s.a

sodium ortho-xenate (sodium 2- o orthophenyl phenate). $o\text{-}C_6H_5 \cdot C_6H_4$ $ONa \cdot 4H_2O$; m.w. 284.5; wh. or bu fl. or powd.; s.w.; s.al.; a germicid and fungicide.

Sofnol. Water softener containing ca cium hydroxide.

soft asphalt. See diasphaltene.

soft black. See black, soft.

soft soap. See soap, green.

softener. A product which impart softness and flexibility to textiles leather, paper, etc., e.g. glycerin oil or fat, or invert sugar.

softening point. The temperature a which a resin flows at a definite rate

soja. See soya.

soja bean oil. See oil, soybean.

sol. A general term for colloidal dis persions, as distinguished from tru solutions.

sol-gel change. The change, in some cases reversible, of a sol, or liquid colloid into a gel, or semi-rigid form of colloid.

solanine. A mixed glycoside; slend need. f.al.; m.p. 244-50; s.w.; s.al.

solanidine. The aglucone of solanine need. f.et.; m.p. 191; s.w.; s.al.

solar constant. Total solar radiation intensity at atmosphere's outer limit equal to 1.34×10^6 ergs/cm^2.

solar oil. See oil, solar.

Solarization. Discoloration or dulling of glass exposed to sunlight or artificial ultra violet light.

Solcornol. Sulfonated corn oil.

solder. A fusible alloy used for joining metallic bodies.

solder, plumber's. An alloy of the composition lead 67, and tin 33 parts.

solder, tin man's. An alloy of the composition tin 67, and lead 33 parts.

solenoidal. Having zero divergence.

solid angle. The angle measured by the ratio of the surface of the portion of a sphere enclosed by the conical surface forming the angle, to the square of the radius of the sphere.

solid solution. A solution of one solid within another; a homogeneous solid mixture in which but one phase exists.

solidification point. Temperature at which a substance changes from a liquid to a solid state.

Soligen. Metallic naphthenates used as paint driers.

solonetz. A type of soil whose absorption complex is more or less saturated by sodium or magnesium.

Solox. Industrial alcohol solvent.

Solozone. Sodium peroxide powder.

solubility. The degree to which a substance will dissolve in a particular solvent, usually expressed as grams dissolved in 100 grams of solvent.

solubility product. The product of the concentrations of the ions of a saturated solution of a substance very slightly soluble in water, each concentration raised to a degree equal to the number of each ion furnished by the molecule.

solubility product law. The product of the concentrations of the ions of a substance very slightly soluble in water, each concentration raised to a power equal to the number of each ion furnished by one molecule, is a constant in all saturated solutions of that substance.

soluble glass. Silicate of soda, or water glass.

soluble oil. See oil, soluble.

soluble starch (amylodextrin). A white powder soluble in water, used as an emulsifying agent, formed by the very slight hydrolysis of starch.

solute. Dissolved substance of a solu-

tion, in contradistinction to the *solvent*, or the substance in which the material is dissolved.

solution. A homogeneous mixture of two or more components in a single phase. Types of solutions are: gas dissolved in gas, gas in liquid, gas in solid, liquid in liquid, and solid in liquid.

solution, molar. See molar solution.

solution, interstitial solid. A solid solution in which the solute atoms fit into spaces between those of the solvent atoms.

solution pressure. The osmotic pressure of a solution; the pressure of a solute in a solution, analogous to gaseous pressure and varying in approximate accordance with the gas laws.

solution pressure, electrolytic. The tendency of a metal placed in water or a solution to throw off positive metallic ions, leaving the metal negative, and establishing thereby a difference of potential between the metal and the solution, commonly called the electrode potential.

solution, primary solid. Solid solution which forms the end phases in equilibrium diagrams.

solution, saturated. See saturated solution.

solution, standard. See standard solution.

solution, substitutional solid. Solid solution in which the solute atoms replace those of the solvent so that two kinds of atoms are in a common lattice.

solution, supersaturated. An unstable type of solution containing a greater concentration of dissolved substance than the normally saturated solution would contain at the same temperature, usually formed by cooling solutions of certain substances saturated at a higher temperature. Excess solute is precipitated upon addition of a crystal of solute.

Solux. Parahydroxyphenylmorpholine; a rubber anti-oxidant.

solvation. Solution of colloids, accompanied, in the initial stages at least, by swelling; process whereby colloids take up large amounts of water and retain it against great pressures, e.g. taking up of water by gelatin; molecular combination of a solvent and solute.

solvation, relative. See relative solvation.

solvency, high. See high solvency.

solvent. The medium within which a substance is dissolved, most commonly applied to liquids used to bring particular solids into solution, e.g. dichloro-ethylene is a solvent for rubber.

solvent naphtha. See naphtha, solvent; also naphtha, coal-tar.

Solvesso. Proprietary name for a series of petroleum solvents; b.p. 93.5-287.8° C.

somatic cells. The cells of an organism other than the germ cells; body cells.

somatic number. Number of chromosomes in a somatic nucleus.

somatophilic. Term applied to bacteria that grow best at body temperature.

sonim. Solid non-metallic inclusion in iron and steel.

sophoretin. See quercetin.

sophorine. See cytisine.

Sorban. An 83% solution of Sorbitol.

sorbic acid (2, 4-hexadienoic acid). CH_3-$CH{:}CHCH{:}CHCOOH$; m.w. 112.06; col. need. f.w.; m.p. 134.5; s.w.; s.al.

sorbing agent. A solid which absorbs or entraps gases, e.g. charcoal.

sorbitan. Inner ether of sorbitol.

sorbite. In the transformation of austenite in steel, the stage following troosite and preceding pearlite.

sorbite, granular. See granular sorbite.

sorbite, lammelar. See lammelar sorbite.

d-sorbitol (1, 2, 3, 4, 5, 6-hexanehexol [one form]; d-sorbite; d-sorbol). $C_6H_{14}O_6 \cdot \frac{1}{2}H_2O$; m.w. 191.12; col. need.; m.p. anh. 110; s.w.; s.al.

d-sorbose (1, 3, 4, 5, 6-pentahydroxy-2-hexanone [one form]; d-sorbinose). $C_6H_{12}O_6$; m.w. 180.09; col.; rhomb.; m.p. 165; s.w.

Sorel cement. See magnesium oxychloride cement.

Soret effect. Difference in concentration in different parts of a solution when these parts are at different temperatures.

sorghum (durra-sorgho, sorghum saccharatum, Kafir, Indian millet). A sugar-producing grass used for food.

sorghum saccharatum. See sorghum.

sorption (occlusion). Absorption or entrapping of gases in solids. See adsorption.

sorts. See bold.

Souprene. A chloroprene type of "synthetic" rubber made in Russia.

souring. The laundry process in which residual alkalinity is neutralized with acids or acid salts.

Sovasol. A petroleum thinner; b.p. 148.9-204.4° C.

Soxhlet apparatus. An apparatus used for extraction.

Soxhlet's lactometer. See lactometer.

soya. The seed of a genus of leguminous plants found in Japan, the Molluccas and India, used as a food, in the preparation of soybean oil, and as a source of urease, an enzyme which decomposes urea.

soybean. See soya.

soybean meal (soybean cake). Cake residue left upon removal of oil from soybean; used as live stock fodder.

soybean oil. See oil, soybean.

sozolic acid. See 1-phenol-2-sulfonic acid.

space chemistry. See stereochemistry.

space formulae. Three dimensional formulae assigned to organic compounds to explain isomerism, etc.

space function. A function relating to a region of space, depending on extent and boundaries of the region.

space group. Group of points in space having a crystalline type of symmetry.

space isomer. See sterioisomer.

space lattice. A lattice formed by taking a group of points in the crystal pattern which are identical in every respect and are a measure of the interval at which the pattern repeats; a three-dimensional pattern of atomic configuration.

space model. Mechanical representation of molecules used in studying stereoisomerism (q.v.).

space, phase. See phase space.

space time yield (S.T.Y.). The number of grams of yield per hour per c.c. of catalyst used.

space velocity. Volume of gas (S.T.P.) or liquid passing thru a given volume of catalyst space in unit time.

spalling. Breaking or crushing due to thermal, mechanical or structural causes, presenting newly exposed surfaces.

sparking metal. See Auer metal.

sparteine (lupinidine). $C_{15}H_{26}N_2$; m.w. 234.22; col. oil; b.p. 325 [764] in H_2; s.al.

sparteine, bisulfate. $C_{15}H_{26}N_2 \cdot H_2SO_4 \cdot 5H_2O$; m.w. 422.37; col. hyg. rhbdr. cr. or powd.; m.p. 136, anh. 150-2; s.w.; s.al.

spathic iron. See siderite.

spatula. An instrument used by the chemical laboratory worker, resembling a table knife, but having dull edges, used conveniently in tranferring powders in weighing, etc.

Spauldite. A synthetic tar-acid resin.

specific cohesion. The ratio of surface tension to density multiplied by two.

specific conductance. See conductivity.

specific energy. Internal energy per unit mass.

specific gravity. Ratio of the mass of a body to the mass of an equal volume of water at 4° C. or some other specified temperature.

specific heat. The ratio of the amount of heat required to raise the temperature of a gram of a substance one degree Centigrade to that required to raise the temperature of 1 g. of water one degree Centigrade.

specific inductive capacity. Ratio of the dielectric constant of a substance to that of a vacuum.

specific refractivity. Refractivity divided by density.

specific resistance (resistivity). The resistance, in ohms, of a conductor one centimeter in length and one square centimeter in cross sectional area.

specific rotation (a). Optical rotation in angular degrees of a solution containing one gram of solute per cubic centimeter, examined in a tube one decimeter in length, at a specific temperature, using a sodium flame as a source of light.

specific surface. The surface in square meters presented by one gram of material.

specific viscosity. Ratio of the viscosity coefficient of a liquid to that of water or some other liquid at a definite temperature.

specific volume. Reciprocal of density.

spectra. Plural of spectrum (q.v.).

spectral reflection curve. Line or curve showing relationship between wave lengths in millimicrons and the reflection factor.

spectral sensitivity. See photoelectric yield.

spectrograph. An instrument for analyzing light into its component wave lengths.

spectrophotometry. Measurement of relative radiant energy as a function of wave length.

spectroscopy. The application of the spectroscope to investigations in chemical composition, atomic structure and astronomy.

spectrum. The series of hues resulting from the refracting or breaking up of white light into its components; the band of varying wave lengths produced when any radiation is dispersed.

spectrum analysis. Chemical analysis effected by the study of spectra, utilizing electric discharge tubes containing the vapors to be studied or solutions of the sample which absorb characteristically certain portions of a continuous spectrum.

spectrum, banded. A spectrum which can be resolved into groups of very fine lines. Such a spectrum is given by undissociated compounds and by certain elements.

spectrum, channeled. See channeled spectrum.

spectrum, continuous. See continuous spectrum.

spectrum, line. A spectrum consisting of more or less sharply defined lines distributed without apparent regularity, being the type of spectrum emitted by excited molecules in the gaseous state, each molecular species yielding a characteristic spectrum.

spectrum, molecular. See molecular spectrum.

specular gloss. See gloss, specular.

Speculum metal. A white bronze containing 33 per cent tin.

speed. Time rate of motion, measured by the distance covered in unit time.

spelter. A commercial zinc.

spent oxide. Spent iron sponge, containing nitrogen.

sperm oil. See oil, sperm.

spermaceti wax. See wax, spermaceti.

spermatozoan. The male reproductive cell or gamete, which fuses with egg cell in the process of fertilization.

Sperry process. The electrolytic manufacture of white lead, lead being used as the anode, iron as the cathode, and lead acetate as the electrolyte.

sperrylite. See platinum arsenide.

spessartite (manganese aluminum garnet). A mineral, $3MnO \cdot Al_2O_3 \cdot 3SiO_2$; cub., dk. red to brnsh. red; sp.gr. 4.0-4.3.

sphagnum (peat moss, bog moss). A club moss growing in marshes, used during the World War as a soft absorbent surgical dressing.

sphalerite (zincblende). A mineral, ZnS; cub., wh., yel., br., blk.; sp.gr. 3.90-4.11; hardness 3.5-4.0. See zinc sulfide.

sphene. See titanite.

spheradian (steradian). A unit solid angle cutting unit surface area of a sphere of unit radius centered at its vertex.

spherical abberation. In optics, abberation, or indistinctness of an image formed by a concave spherical mirror or converging lens, due to the fact that rays striking the outer portions of lens or mirror are converged to a nearer focus than axial rays, this being a limitation of spherical surfaces so used.

spherical candlepower. The average candle power of a lamp in all directions in space; equal to the total luminous flux of the lamp, in lumens, divided by 4π.

spherocobaltite. See cobalt carbonate (ous).

spheroidizing. Continued heating of ferrous alloy at or slightly below critical temperature, followed by slow cooling.

spherolite. See globulite.

spike oil. See oil, lavender.

spin. Angular momentum.

spin coupling (spin-spin interaction). Interaction of fields thru electron spins.

spin moment. Rotational moment of the momentum of an electron about its axis.

spin-spin interaction. See spin coupling.

spindle oil. See oil, spindle.

spinel. A mineral, $MgO \cdot Al_2O_3$; cub., col. or red, bl., grn., yel., br., blk.; sp.gr. 3.5-4.1; hardness 8.

spinel blue. See cobalt magnesium aluminate.

spinneret. Small metal disk containing minute openings thru which cellulose or other solutions are forced in forming artificial fibers.

spinning. In metal work, a process for shaping sheet metal by rotating it at high speed and applying pressure to flow it upon the form.

spinor. Complex vector of two dimensions used in connection with electron spin.

spintheriscope. An instrument containing a small sulfide screen or other suitable luminescent screen, before which is mounted a particle of radioactive material, scintillations being observed on the screen thru an eyepiece due to bombardment by alpha particles.

spiral. A curve generated by a fixed point moving about a fixed center at a continually increasing distance.

spirit, mineral. See mineral spirits.

spirit soluble dye. Dye soluble in alcohol and insoluble in water, usually azo colors lacking the $—SO_3OH$ group.

spirit stain. See stain, spirit.

spirit varnish. Varnish containing a resin (usually shellac) and a volatile solvent, e.g. alcohol.

spirit of wine. See ethyl alcohol.

spirits, mineral. See mineral spirits.

spirits of turpentine. See turpentine oil.

spiro-symmetry. Permanent molecular asymmetry.

spiro system. A system of two rings containing one common atom.

spirochaetes. Bacteria characterized by their spiral flexible shape with movements apparently rotary, e.g. spirochaete bacteria causing syphilis.

splint coal. A free burning, hard and tough variety of bituminous and

subbituminous coal having a dull luster and grayish-black color. It breaks with an irregular, rough, sometimes splintery fracture.

splitting. The decomposition of a compound into two component parts, usually a process of hydrolysis, as in the case of a fat.

spodumene (hiddenite, kunzite). A mineral, $Li_2O \cdot Al_2O_3 \cdot 4SiO_2$; monocl., wh., gray, grn., pink, or purp.; sp.gr. β, 2.644-2.649; hardness β, 5.5-6.0.

spontaneous combustion. Combustion arising spontaneously due to slow oxidation and the gradual accumulation of heat under suitable conditions; e.g. the spontaneous ignition of rags moistened with linseed oil.

spontaneous oxidation. See autoxidation.

sporangium. Sac in which spores are produced endogenously.

spore. Reproductive body of one or more cells, produced by a sporophyte and developing, without fusion, into an independent organism (of the gametophyte generation).

sporophyte. The spore-bearing generation in the life cycle of plants, the other stage being the gametophyte generation.

sporulation (multiple fission). Method of reproduction of many unicellular and some multicellular plants and animals, whereby the cell divides into many individuals, asexually; the act or condition of producing spores.

spot welding (projection welding). Electrical welding effected by holding parts together under great pressure while passing a heavy current thru them.

spray drying. Process of drying solids by spraying solutions of them into a heated chamber.

spray-gun. A device for spraying paint or lacquer, operating upon compressed air.

spraying. Application of a fluid in the form of a stream or cloud of fine droplets.

spreader. See wetting agent.

spreading area rate. Area which a gallon of paint will cover.

spreading coefficient. A measure of the wetting power of a solution for an oil used as a standard.

spreading time rate. Time in minutes required to apply a gallon of paint.

spruce extract. Extract obtained from the spruce tree; a paper industry by-product; used in the tanning of leather.

spruce sulfite extract. See spruce extract.

squalene. $C(CH_3)_2:(CHCH_2CH_2\text{-}CCH_3)_2:(CHCH_2)_2$; b.p. 240-4; an unsaturated hydrocarbon, a precursor to cholesterol; a colorless oil.

square. In mathematics, the second power, or the product of a number or term by itself, e.g. the square of 3 expressed as 3^2 is equal to 9.

squaw mint. See hedeoma.

squeeze-molding. Molding of plastics effected by gradual application of pressure, using hydraulic presses.

squill (scilla; sea onion). Dried bulb of urginea s.; used in medicine.

SS acid. See Chicago acid.

St. *See Saint.*

Stabilizer No. 1. 1-3-5-Isopropyl cresol.

stachydrine. $C_7H_{13}NO_2 \cdot H_2O$; m.w. 161.13; deliq. cr.; m.p. 210 dry; s.w.; s.al.

stachydrine, oxalate. $C_7H_{13}NO_2 \cdot H_2C_2O_4$; m.w. 233.13; need.; m.p. 105-7; i.al.

stain, spirit. Stain consisting of dyes dissolved in alcohol or similar solvent.

stainless steel. Steel containing 12-20% chromium; used in making cutlery and non-tarnishing parts.

stalactite. Icicle-like calcium carbonate formation hanging from the roofs of calcareous caves. See also stalagmite.

stalagmite. A formation of calcium carbonate resembling an inverted icicle, found standing on the floors of calcareous caves.

stalagmometer. Special glass tube used for determining surface tension.

stand oil (standol). A mixture of about three parts of linseed and one part of wood oils which remain unchanged when heated together; a drying oil made by heating oils at 260-315° C. until proper viscosity is reached.

standard atmosphere (for textile materials). See atmosphere, standard.

standard deviation. See deviation, standard.

standard electrode. Electrode used as a standard in measurements of electrode potentials, because its potential is constant. The calomel electrode is such a standard and it consists of mercury as the electrode and a saturated solution of calomel, free from mercuric chloride, in a solution of potassium chloride of definite concentration.

standard solution. A solution of accurately known strength used in volumetric analysis.

standard state (reference state). That physical condition in which an element exists naturally at a pressure of 1 atmosphere and at a temperature of 18° C.; completely defined state of a system in which arbitrary values are assigned to the thermodynamic functions.

standard temperate and pressure (normal temperature and pressure). 0° C. and 760 mm., temperature and pressure values chosen as standards because of their convenience.

standöl. See stand oil.

stannane, dibenzyldiethyl-. $(C_6H_5\text{-}CH_2)_2Sn(C_2H_5)_2$; m.w. 358.89; liq.; s.g. 1+; m.p. <20; b.p. 223-4 [20].

stannane, dibenzylethylpropyl-. $(C_6H_5\text{-}CH_2)_2(C_2H_5)(C_3H_7)Sn$; m.w. 372.90; liq.; m.p. >0; b.p. 220-5 [15].

stannane, diethyldimethyl-. See tin, diethyldimethyl-.

stannane, tetraethyl-. See tin, tetraethyl-.

stannane, tetramethyl-. See tin, tetramethyl-.

stannate. Salt of tin wherein the latter has a valence of 4, and is part of the negative radical, e.g. sodium stannate, $Na_2SnO_3 \cdot 3H_2O$.

stannic. Designation for quadrivalent tin, or compounds containing quadrivalent tin, e.g. stannic chloride, $SnCl_4$. *For all "stannic" compounds see corresponding "tin" compound; e.g. stannic bisacetylacetone dibromide is listed as tin bromide, di-, bisacetylacetone.*

stannic acid. See stannic acid, meta- or ortho-.

stannic acid, chloro-. $H_2SnCl_6 \cdot 6H_2O$; m.w. 441.55; col. leaf.; s.g. 1.93; m.p. 9; s.w.

stannic acid, chloroethyl-. $H_2Sn\text{-}C_2H_5Cl_5$; m.w. 327.04; col. deliq. pr.

stannic acid, ethyl-. $C_2H_5SnO \cdot OH$; m.w. 180.75; wh. amor. gel. or powd.; i.w.; i.al.

stannic acid, ethylchloro-. See stannic acid, chloroethyl-.

stannic acid, isopropyl-. C_3H_7SnOOH; m.w. 194.76; wh. amor.; i.w.

stannic acid, meta- (α acid). H_2SnO_3; m.w. 168.72; amor. or coll. ppt., wh.; i.w.

stannic acid, methyl-. See methane stannonic acid.

stannic acid, ortho-. H_4SnO_4; m.w. 186.73; wh. gel.; s.w.

stannic acid, penta- (β acid). $H_{16}Sn_4O_{15}$; m.w. 843.58; amor. or gel. wh.; i.w.

stannizing. Process for coating brass, copper, iron, zinc and other metals with tin by exposing them to vapors of stannous chloride in an atmosphere of hydrogen.

stannite. A mineral; Cu_2FeSnS_4; granular, metallic, steel-gray to iron-black.

stannone, diethyl-. See tin oxide, diethyl-.

stannonic acid, methane. See methane stannonic acid.

stannonic acid, methyl-. See methane stannonic acid.

stannous. Designation for compounds containing divalent tin, e.g. stannous chloride, $SnCl_2$.

staple. The length of textile fibers.

starch. $(C_6H_{10}O_5)_x$; m.w. $(162.08)_x$; wh. amor.; i.w.; i.al.; an exceedingly important component of vegetable foods; used in preparation of glucose, dextrin, and in the laundry.

starch, animal. See glycogen.

starch, corn. See starch.

starch gum. See dextrin.

starch, soluble. See soluble starch.

Starck effect. The separation of spectral lines into their components by the action of a strong electric field.

Stark-Luneland effect. Polarization of light from a beam of moving atoms in the absence of a field.

starter. Bacterial culture added to cream to hasten and improve butter formation.

stassfurtite. See boracite.

statampere. An electrostatic c.g.s. unit of current, equal to 3.33560×10^{-11} electromagnetic c.g.s. units.

statcoulomb. An electrostatic c.g.s. unit of quantity of current, equal to 3.33560×10^{-11} electromagnetic c.g.s. units.

statfarad. A unit of electrical capacity; the electrostatic c.g.s. unit equal to 1.11263×10^{-21} electromagnetic c.g.s. units.

stathenry. A unit of electrical inductance; the electrostatic c.g.s. unit equal to 8.98776×10^{11} henrys (absolute).

static electricity. Electricity at rest; non-flowing electricity commonly generated by friction.

static pressure. Compressive pressure in a fluid.

statics. The branch of physics concerned with the equilibrium of forces acting upon bodies, hence concerned with weight, pressure, etc.

statistical diameter. Dimension across the projected image of a particle, measured along any line that bisects the area of the image.

statistical equilibrium. State of a statistical variable whose variations are caused by distribution according to chance.

statistical variable. A variable having observable magnitude controlled by chance.

statistics, classical. See classical statistics.

statohm. An electrical unit of resistance, the electrostatic c.g.s. unit; 1×10^{-9} ohms.

stator. Non-rotating member of motor or generator.

statvolt. An electrical unit of potential, the electrostatic c.g.s. unit; 299.796 volts.

staurolite. A mineral, $5Al_2O_3 \cdot 2FeO \cdot 4SiO_2 \cdot H_2O$; rhomb., redsh. br., blk., yelsh. br., gray; sp.gr. 3.65-3.77; hardness 7.0-7.5.

Staybelite. A resin obtained from the partially and completely hydrogenated acid and non-acid constituents of rosin, used in adhesives and paper size.

S.T.C. curve. Surface tension-concentration curve.

steam distillation. Distillation process where steam is passed thru a heated liquid. The steam carries away materials by forming volatile mixtures having a lower boiling point than the material itself.

steam emulsion number (demulsification number). Time required to separate an oil, emulsified and separated under certain defined conditions.

steam, saturated. Water vapor having the temperature of boiling water at the given pressure.

steam table. A table of steam properties expressed as functions of pressure or temperature.

steam, wet. Saturated steam containi entrained moisture.

steapsin (pancreatic lipase). A fa digesting enzyme contained in t pancreatic juice.

stearaldehyde (octadecanal). $C_{17}H_3$ CHO; m.w. 268.28; col. leaf.; m.p 109; b.p. 251 [13]; i.w.; s.al.

stearamide (octadecanamide). CH $(CH_2)_{16}CONH_2$; m.w. 283.30; co leaf.; m.p. 109; b.p. 25 [13]; i.w.; s.al.

stearamide, n, n'-diamyl-. A ligh yellow oil with a slight aminelik odor, completely soluble in miner oil.

stearamide, n-octyl-. A cream-colore wax; b.p. 242-6 [1]; m.p. 40.5-42.5.

stearic acid (octadecanoic acid; n-octa decylic acid). $CH_3(CH_2)_{16}COOH$ m.w. 284.28; col. monocl. leaf.; m.p 69.4; b.p. 383.

stearic acid, amyl ester. $C_{17}H_3$ $COO(CH_2)_4CH_3$; m.w. 354.36; pl. m.p. 30; b.p. 360; i.w.; s.al.

stearic acid, benzyl ester. $C_{17}H_3$ $COOCH_2C_6H_5$; m.w. 374.33; cr.; m.p 45.8; i.w.; s.al.

stearic acid, butyl ester (butyl stearate butyl octadecanoate). $C_{17}H_{35}COO$ C_4H_9; m.w. 340.34; col. liq.; m.p 19.5; b.p. 220-5 [25]; s.al.

stearic acid, θ, ι-dibromo-. See elaidi acid, dibromide.

stearic acid, diethylene glycol este See diethylene glycol, distearate.

stearic acid, α, β-dihydroxy- (2, 3 dihydroxyoctadecanoic acid). $C_{17}H_3$ $(OH)_2COOH$; m.w. 316.28.
(a) leaf. f.al.; m.p. 132.
(b) leaf. or pl. f.w.; m.p. 99; s.w.

stearic acid, θ, ι-dihydroxy- (9, 10 dihydroxyoctadecanoic acid). CH_3 $(CH_2)_7CH(OH)CH(OH)(CH_2)_7$ COOH; m.w. 316.28; leaf.; m.p 131.5; s.w.

stearic acid, θ, ι-diketo-. See stearoxyli acid.

stearic acid, ethylene ester. See glycol distearate.

stearic acid, ethyl ester (ethyl octa decanoate). $CH_3(CH_2)_{16}COOC_2H_5$ m.w. 312.31; col. cr.; m.p. 33.7; b.p 224; i.w.; s.al.

stearic acid, glyceryl ester. See glycerol tristearate.

stearic acid, θ, ι, λ, μ, ξ, o-hexabromo- (9, 10, 12, 13, 15, 16-hexabromo octadecanoic acid; α-linolenic acid hexabromide). $C_{17}H_{28}Br_6COOH$ m.w. 757.73; need.; m.p. 180-1; i.w

stearic acid, θ, ι, λ, μ, ξ, o-hexabromo-ethyl ester. $C_{17}H_{29}Br_6COOC_2H_5$ m.w. 785.76; fine need.; m.p. 151.5-2.5 i.w.; i.al.

stearic acid, α-hydroxy- (2-hydroxy octadecanoic acid). $CH_3(CH_2)_{14}$ $CHOHCOOH$; m.w. 300.28; need f.chl.; m.p. 93.

stearic acid, β-hydroxy- (dl) (dl-3 hydroxyoctadecanoic acid). CH_3 $(CH_2)_{14}CHOHCH_2COOH$; m.w. 300. 28; pl. f.chl.; m.p. 89; s.al.

stearic acid, ι-hydroxy- (10-hydroxy octadecanoic acid). $CH_3(CH_2)_7$ $CHOH(CH_2)_8COOH$; m.w. 300.28 hex. pl.; m.p. 81-1.5; i.w.

stearic acid, κ-hydroxy- (11-hydroxy octadecanoic acid). $CH_3(CH_2)_6$ $CHOH(CH_2)_9COOH$; m.w. 300.28 tab. f.al.; m.p. 84; i.w.

stearic acid, λ-hydroxy- (12-hydroxy octadecanoic acid). $CH_3(CH_2)_5$ $CHOH(CH_2)_{10}COOH$; m.w. 300.28 cr. f. al.; m.p. 81-2; i.w.; s.al.

stearic acid, isoamyl ester (isoamy stearate; γ-methylbutyl octadec anoate). $CH_3(CH_2)_{16}COOC_5H_{11}$; m.w. 354.36; cr.; m.p. 23; b.p. 185-90 [5] i.w.; s.al.

stearic acid, methyl ester (methy octadecanoate; methyl stearate) $C_{17}H_{35}COOCH_3$; m.w. 298.30; co cr. f. et.; m.p. 38; b.p. 215 [15]; i.w.; s.a

stearic acid, p-phenylphenacyl este $C_{17}H_{35}COOCH_2COC_6H_4C_6H_5$; m.w 478.36; m.p. 91.

stearic acid, δ, ι, λ, μ-tetrabrom-

(9, 10, 12, 13-tetrabromooctadecanoic acid; linoleic acid tetrabromide). $C_{17}H_{31}Br_4COOH$; m.w. 599.91; wh. pl.; m.p. 114-5; i.w.; s.al.

stearic acid, δ, ι, λ, μ-tetrabromo-, ethyl ester. $C_{17}H_{31}Br_4COOC_2H_5$; m.w. 627.94; need.; m.p. 58-8.5; i.w.; s.al.

stearic acid, δ, ι, λ, μ-tetrabromo-, methyl ester. $C_{17}H_{31}Br_4COOCH_3$; m.w. 613.93; leaf.; m.p. 50-6; i.w.; s.al.

stearic anhydride (octadecanoic anhydride). $(C_{17}H_{35}CO)_2O$; m.w. 550.55; col. cr.; m.p. 71.5.

stearin. See glycerol, tristearate.

stearin pitch. Pitch obtained from stearine; sp.gr. 0.9-1.1; br.-blk.; used in paints, insulations.

stearine. See glycerol tristearate.

stearolic acid (9-octadecynoic acid). $CH_3(CH_2)_7C{:}C(CH_2)_7COOH$; m.w. 280.25; col. pr. f. al.; m.p. 48; b.p. 260; i.w.; s.al.

stearone. See 18-pentatriacontanone.

stearonitrile (octadecanenitrile). $C_{17}H_{35}CN$; m.w. 265.28; col. cr.; m.p. 41; b.p. 214 [15]; i.w.; s.al.

stearoxylic acid (9, 10-dioxooctadecanoic acid; θ, ι-diketostearic acid). $CH_3(CH_2)_7COCO(CH_2)_7COOH$; m.w. 312.25; yel. leaf.; m.p. 86; i.w.; s.al.

stearyl chloride (octadecanoyl chloride). $C_{17}H_{35}COCl$; m.w. 302.73; col. cr.; m.p. 23; b.p. 215 [15].

steatite. See talc.

steatolytic (lipolytic, glycerogenic). Term applied to enzymes which hydrolyze fats into glycerin and fatty acids.

steel. An alloy of iron containing from less than 0.15 to 3 per cent of carbon: much harder and more elastic than iron.

steel, blister. Cementation-process steel, after removal from fire brick chest.

steel, chrome. See chrome steel.

steel, killed. Steel containing enough gas solvent, during chilling, to prevent escape of gas with production of holes.

steel, manganese. See manganese steel.

steel, mild. A low carbon steel which cannot be tempered.

steel, quaternary. Steel alloy containing iron, carbon and two other special elements.

steel, rimming. Low carbon, simple steel, that has been boiled in a furnace and to which little or no gas solvent has been added at the end of process.

steel, semi-killed. Partially killed steel (q.v.).

steel, silicon. See silicon steel.

steel, stainless. See stainless steel.

steel, tungsten. See tungsten steel.

Stefan-Boltzman constant. Constant associated with the emissive power of a black body equal to 5.735×10^{-5} erg cm^{-2} sec^{-1} deg^{-4}.

Stefan-Boltzman law. The total emissive power of a black body is proportional to 4th power of its absolute temperature.

Steinmetz formula. Formula for loss of energy per unit volume per cycle due to magnetic hysteresis.

Stellite. An alloy of iron, cobalt, chromium, tungsten, and molybdenum, harder than steel; non-tarnishing; used for cutting tools.

stem correction (exposed stem correction). Correction for error due to difference in temperature between exposed and submerged portions of a thermometer.

Stenol. Technical stearyl alcohol.

stephanite. $5Ag_2S \cdot Sb_2S_3$; sp.gr. 6.2; a black mineral.

steradian. See spheradian.

sterane. Ring skeleton of steroids.

stercorite (microcosmic salt). A mineral, $HNa(NH_4)PO_4 \cdot 4H_2O$; monocl., wh.; sp.gr. 1.615; hardness 2.

stereo power. Ratio of distance between objective axes to distance between eyepiece axis multiplied by power of magnification.

stereochemistry (stereometry, space chemistry). The study of the spatial configuration of compounds, as it affects isomerism.

stereogram. Model diagram giving a representation of data in a three-dimensional or solid form.

stereoisomerism. Isomerism depending upon the spatial arrangement of the atoms or groups of a compound.

stereometer. An apparatus for determining the specific gravity of porous substances, powders, etc.

stereometry. See stereochemistry.

stereophonic. Combining perspective and sound.

stereoscopic radius. Largest distance at which stereoscopic effect can be observed.

steric hindrance. The effect of one or more groups in modifying the chemical activity of another group by virtue of proximity to it on the same molecule or because of a particular arrangement of the groups, e.g. a methyl group in the ortho position to a carboxyl group may shield the latter from effective reaction with reagents.

sterid. A sterol-like substance.

sterile. Free from bacteria.

sterling silver. See silver, sterling.

Stern-Gerlach field. A special non-homogeneous magnetic field for examining molecular rays.

sternatutory. A substance which produces sneezing.

sterol. A complex cyclic compound containing 27 to 30 carbon atoms; a solid alcohol of biological importance, e.g. cholesterol; see lipin.

steroid. Derivative of cyclopentenophenanthrene.

stibine. See antimony hydride.

stibine, triethyl- (antimony triethyl). $Sb(C_2H_5)_3$; m.w. 208.88; col. liq.; m.p. < -29; b.p. 159.5; i.w.; s.al.

stibine, trimethyl- (antimony trimethyl). $Sb(CH_3)_3$; m.w. 166.83; col. monocl. liq. f.w.; b.p. 80.6; s.w.; i.al.

stibiotantalite. A mineral, $Sb_2O_3 \cdot Ta_2O_5$; rhomb., br., redsh. yel., yel.; sp.gr. 6.6-7.9; hardness 5.0-5.5.

stibnite (antimonite). A mineral, Sb_2S_3; rhomb., lead gray or blk.; sp.gr. 4.52-4.62; hardness 2.

stick. Liquid obtained from slaughterhouse tankage.

stick lac. See shellac.

stigma. That part of the pistil of a flower which receives the pollen grains and upon which they germinate.

stigmatic. Of equal focal power in all meridians; see homocentric.

stilb. Measure of surface brightness; 1 candle per sq. cm.

stilbene (trans-1, 2-diphenylethylene; trans-sym-diphenylethylene; toluylene). $C_6H_5CH{:}CHC_6H_5$; m.w. 180.09; col. monocl. tab. f. al.; m.p. 124; b.p. 307; i.w.

2, 2'-stilbenediamine (o, o'-diaminostilbene). $NH_2C_6H_4CH{:}CHC_6H_4NH_2$; m.w. 210.13.
cis: red. need. f.w.; m.p. 123.
trans: gold-yel. pr. f.al.; m.p. 176; s.al.

4, 4'-stilbenediamine (p, p'-diaminostilbene). $NH_2C_6H_4CH{:}CHC_6H_4NH_2$; m.w. 210.13; yel. need. or leaf.-f.al.; m.p. 227-8; s.w.; s.al.

stilbene, diamino-. See stilbenediamine.

stilbene, 2, 2'-diamino-(cis). $NH_2C_6H_4CH{:}CHC_6H_4NH_2$; m.w. 210.13; red. need. f.w.; m.p. 123.

stilbene, α-phenyl-. See ethylene, triphenyl-.

stilbite (desmine). A mineral, $(Na_2,Ca)O \cdot Al_2O_3 \cdot 6SiO_2 \cdot 6H_2O$; monocl., col., wh., also br., yel., redsh.; sp.gr. 2.09-2.24; hardness 3.5-4.0.

still. See retort.

stinkweed. See stramonium.

stock, bright. Normally, filter cylinder stock (q.v.) from which wax has been removed.

stock chest. Vessel receiving paper pulp from beaters and from which it goes to refining engine.

stock, dark cylinder. Heavy viscous dark oil residue from the distillation of crude petroleum; used for internal lubrication of steam engine cylinders and valves.

stock, filtered cylinder. Green amber oil obtained by filtering dark cylinder stock (q.v.).

Stockholm tar. A pine tar used in wooden boat-building, etc.

Stoddard solvent. A colorless refined petroleum product for use in the dry cleaning industry; b.p. 154.4-202.2.

stoichiometry. Branch of chemistry dealing with the quantitative relationships of chemical elements and compounds, and the methods of calculating these relationships.

stoke. A kinematic viscosity unit corresponding to the poise.

Stokes line. Line in Raman spectrum that moves toward long-wave-length side of the incident light.

Stokes laws. (a) The force necessary to propel a spherical body of radius, r, at uniform speed, v, thru a viscous medium having a viscosity coefficient, ν, is equal to $6\pi\nu rv$. (b) The luminescence wave length excited by radiation exceeds that of the exciting radiation.

stolzite. A mineral, $PbO \cdot WO_3$; tetr., grn. to gray or br.; sp.gr. 7.87-8.13; hardness 2.75-3.0.

stoma. A minute pore or orifice in the lower epidermis of leaves, etc. which opens directly into the air cavities and thru which gases are admitted and released.

stomata. Plural of stoma (q.v.).

stoneware. An impermeable vitrified ware used largely in chemical industries.

stop-point. In distillation, a specified temperature at which the distillation is halted and the condensate removed, allowing two minutes for drainage for low boiling products and five for all other products.

storax. See styrax.

stovaine (benzoyldimethylaminoethyl propanol hydrochloride). $C_6H_5{-}COO{-}C(CH_3)(C_2H_5){-}CH_2{-}N(CH_3)_2{-}HCl$; m.w. 271.64; m.p. 175; an anesthetic.

strain. Distortion produced by the force which alters form or volume.

strain axes. Three lines perpendicular to each other which remain so, in the case of an elastic solid, when the latter is subjected to strain.

strain ellipsoid. Ellipsoid formed from a small sphere under strain.

strain energy, limiting. Quantity of energy that can be absorbed per unit volume of material uniformly strained to its elastic limit by the application of a specified combination of principal stresses.

strain theory. The valence forces between carbon atoms in a ring act in straight lines; when these lines are bent toward each other a tension or strain results with a tendency for the ring to open and form addition products.

stramonium (Jamestown weed; jimson weed; thorn apple; stinkweed; devil's apple; apple of Peru). Dried leaves and flower top of datura Stramonium; used in medicine.

straphanthin. A mixture of glucosides extracted from strophanthus; s.w.; s.al.; used in medicine.

stratiform. Formed in a layer.

stratosphere (isothermal region). Region of upper atmosphere above 50,000 feet.

stream tin. See cassiterite.

stream tube (tube of flow). Part of a fluid in motion surrounded by lines of flow.

streaming potential. Current set up between extremes of a diaphragm when a liquid is forced thru a porous diaphragm.

strengite. A mineral, $FePO_4 \cdot 2H_2O$; rhomb., pa. red; sp.gr. 2.84-2.87; hardness 3-4.

stress. Force producing or tending to produce deformation in the body, measured by the force applied per unit area; resistive force within a metal that balances the force applied in stretching, bending, or otherwise altering the form of the metal.

stress, breaking. See tensile strength.

stress couple. The couple of integrated stress at any cross section of a bent elastic rod or beam, equal and opposite to moment of bending.

stress, fiber. See stress.

stress, maximum. See tensile strength.

stress modulus. Stress divided by strain of any elastic deformation.

stress-strain diagram. Diagram plotted with values of stress as ordinates and strain as abscissas.

stress, ultimate. See tensile strength.

strike. The bearing of a line at right angles to the magnetic dip (q.v.), determined by compass readings; in electroplating, the first electrochemical deposit, or the electrolyte for preliminary plating.

striking. Depositing a color on a base material.

strip ingot. Ingot from which strip or sheet is rolled.

striped alder. See hamamelis.

stripped atom. Atom deprived of most of its outer electrons.

stripping. Removal or bleaching of dyes from textiles; removal of liquid constituents from a gaseous mixture. See boiling-off.

stripping agent. Chemical used for localized bleaching on printed or dyed fabrics.

stroboscope. A device used for making vibrating, rotating, or moving bodies appear stationery, utilizing an intermittent illumination of the same frequency as the rotating or vibrating body, or a suitable fraction thereof, each flash being of very short duration.

stromeyerite (argentiferous copper glance, argento-cuprous sulfide). $[Ag,Cu]_2S$; sp.gr. 6.2; steel-gray; a mineral.

strong acid. See acid, strong.

strontianite. A mineral, $SrCO_3$; rhomb., col., wh., gray, yel., grn.; sp.gr. 3.680-3.714; hardness 3.5-4.0.

strontium. Sr; at. wt. 87.63; cub. silv. wh.-pa. yel. met.; s.g. 2.6; m.p. 752 (800); b.p. 1150; s.al.; one of the alkali metals.

strontium acetate. $Sr(C_2H_3O_2)_2 \cdot \frac{1}{2}H_2O$; wh. cr. powd.; s.w.; s.al.

strontium arsenate, ortho-. $SrHAsO_4 \cdot H_2O$; m.w. 245.58; rhomb. need.; s.g. 3.606 [15]; m.p. $-H_2O$, 125; s.w.

strontium arsenite, ortho-. $Sr_3(AsO_3)_2 \cdot 4H_2O$; m.w. 580.81; cr. or wh. powd.; s.w.; s.al.

strontium borate. $Sr(BrO_2)_2 \cdot H_2O$; m.w. 361.48; monocl. col.-yelsh., hyg.; s.g. 3.773; m.p. $-H_2O$, 120; m.p. d. 240; s.w.

strontium borate, tetra-. $SrB_4O_7 \cdot 4H_2O$; m.w. 314.97; s.w.

strontium boride. SrB_6; m.w. 152.55; blk. cr.; s.g. 3.3; i.w.

strontium bromide. $SrBr_2$; m.w. 247.46; wh. need. hyg.; s.g. 4.216 [24]; m.p. 643; s.w.; s.al.

strontium bromide. $SrBr_2 \cdot 6H_2O$; m.w. 355.56; hex. col., hyg.; s.g. 2.358 [15]; m.p. d. 20; b.p. $-6H_2O$ >180; s.w.; s.al.

strontium carbide. SrC_2; m.w. 111.63; tetr. blk.; s.g. 3.2.

strontium carbonate. $SrCO_3$; m.w. 147.63; rhomb. col. or wh. powd.; s.g. 3.70; m.p. 1497 [atm]; b.p. $-CO_2$, 1340; s.w.

strontium chlorate. $Sr(ClO_3)_2$; m.w. 254.54; rhomb. col. or wh. powd.; s.g. 3.152; m.p. 120 d.; s.w.; i.abs.al.

strontium chlorate. $Sr(ClO_3)_2 \cdot 8H_2O$; m.w. 398.67; wh. need.; s.w.; s.al.

strontium chloride. $SrCl_2$; m.w. 158.54; cub. col.; s.g. 3.052; m.p. 873; s.w.; s.al.

strontium chloride. $SrCl_2 \cdot 6H_2O$; m.w. 266.64; trig. col.; s.g. 1.93; m.p. $-4H_2O$, 60; b.p. $-6H_2O$, 100; s.w.; s.al.

strontium chromate. $SrCrO_4$; m.w. 203.64; monocl. yel.; s.g. 3.895 [15]; s.w.

strontium cyanide. $Sr(CN)_2 \cdot 4H_2O$; m.w. 211.71; deliq. cr.; s.w.

strontium dithionate. $SrS_2O_6 \cdot 4H_2O$; m.w. 319.81; trig.; s.g. 2.373; m.p. $-4H_2O$, 78; s.w.; i.al.

strontium ferrocyanide. $Sr_2Fe(CN)_6 \cdot 15H_2O$; m.w. 657.38; monocl. yel.; s.w.

strontium fluochloride. $SrF_2 \cdot SrCl_2$; m.w. 284.17; tetr.; s.g. 4.18; m.p. 962; i.al.

strontium fluoride. SrF_2; m.w. 125.63; cub. col. or wh. powd.; s.g. 2.44; m.p. 1190; s.w.

strontium fluosilicate. $SrSiF_6 \cdot 2H_2O$; m.w. 265.72; monocl.; s.g. 2.99 [17.5]; s.w.; s. 50% al.

strontium formate. $Sr(CHO_2)_2$; m.w. 177.65; rhomb.; s.g. 2.69; m.p. 71.9; s.w.

strontium formate. $Sr(CHO_2)_2 \cdot 2H_2O$; m.w. 213.68; rhomb. col.; s.g. 2.695; s.w.

strontium glycerophosphate. $SrO_3PO \cdot C_3H_5(OH)_2$; m.w. 257.70; wh. powd.; s.w.; i.al.

strontium hydrosulfide. $Sr(SH)_2$; m.w. 153.77; cryst.; s.w.

strontium hydroxide. $Sr(OH)_2$; m.w. 121.65; wh. deliq.; s.g. 3.625; m.p. 375; s.w.

strontium hydroxide. $Sr(OH)_2 \cdot 8H_2O$; m.w. 265.77; tetr. col.; deliq.; s.g. 1.40; m.p. $-8H_2O$, 100; s.w.

strontium iodide. SrI_2; m.w. 341.47; col. pl.; s.g. 4.549 [25]; m.p. 402; s.w.

strontium iodide. $SrI_2 \cdot 6H_2O$; m.w. 449.56; hex. col.-yelsh., deliq.; s.g. 4.415; s.w.; s.al.

strontium lactate. $Sr(C_3H_5O_3)_2 \cdot 3H_2O$; m.w. 319.75; wh. cr. or gran. powd.; s.w.; s.al.

strontium manganate, per-. $Sr(MnO_4)_2 \cdot 3H_2O$; m.w. 379.54; cub. purp.; s.w.

strontium molybdate. $SrMoO_4$; m.w. 247.63; s.g. 4.145; s.w.

strontium nitrate. $Sr(NO_3)_2$; m.w. 211.65; cub. col.; s.g. 2.986; m.p. 570; s.w.; s.abs.al.

strontium nitrate. $Sr(NO_3)_2 \cdot 4H_2O$; m.w. 283.71; monocl. wh.; s.g. 2.2; s.w.; s.abs.al.

strontium nitrite. $Sr(NO_2)_2 \cdot H_2O$; m.w. 197.66; hex.; s.g. 2.408 [4]; m.p. $-H_2O$, 44; s.w.; s. 90% al.

strontium oxalate. $Sr(C_2O_4) \cdot H_2O$; m.w. 193.65; col.; s.w.

strontium oxide. SrO; m.w. 103.63; cub. gray-wh.; s.g. 4.7; m.p. 2430; s.al.

strontium oxide, per-. SrO_2; m.w. 119.63; wh. powd.; s.g. 4.56; s.w.; s.al.

strontium oxide, per-. $SrO_2 \cdot 8H_2O$; m.w. 263.75; col. cr.; m.p. $-8H_2O$, 100; s.w.; s.al.

strontium phosphate, ortho-, acid. $SrHPO_4$; m.w. 183.66; rhomb. col.; s.g. 3.544 [15]; i.w.

strontium salicylate. $Sr(C_7H_5O_3)_2 \cdot 2H_2O$; m.w. 397.74; col. cr.; s.w.; s.al.

strontium selenate. $SrSeO_4$; m.w. 230.83; rhomb.; s.g. 4.23; i.w.

strontium silicate. $SrSiO_3$; m.w. 163.69; col. pr.; s.g. 3.65; m.p. 1580; i.w.

strontium sulfate (celestite). $SrSO_4$; m.w. 183.69; rhomb. col.; s.g. 3.96; m.p. 1580 d.; s.w.; i.al.

strontium sulfate, acid. $Sr(HSO_4)_2$; m.w. 281.77.

strontium sulfide, mono-. SrS; m.w. 119.69; cub. lt. gray; s.g. 3.70 [15]; s.w. d.; s.al.

strontium sulfide, tetra-. $SrS_4 \cdot 6H_2O$; m.w. 323.96; redsh. cr.; m.p. 25; s.w.; s.al.

strontium sulfite. $SrSO_3$; m.w. 167.69; col. cr.; s.w.

strontium tartrate. $SrC_4H_4O_6 \cdot 4H_2O$; m.w. 307.72; monocl.; s.g. 1.966; s.w.

strontium thiocyanate. $Sr(CNS)_2 \cdot 3H_2O$; m.w. 257.81; deliq.; m.p. $-3H_2O$, 100; b.p. d. 160-70; s.w.; s.al.

strontium thiosulfate. $SrS_2O_3 \cdot 5H_2O$; m.w. 289.93; monocl. need.; s.g. 2.17 [17]; m.p. $-4H_2O$, 100; s.w.; i.al.

strontium tungstate. $SrWO_4$; m.w. 335.63; tetr.; s.g. 6.187; s.w.; i.al.

structural viscosity. See viscosity, structural.

struvite. A mineral, $(NH_4)_2O \cdot 2MgO \cdot P_2O_5 \cdot 12H_2O$; rhomb., wh. or yelsh.; sp.gr. 1.65-1.72; hardness 2.

strychnine. $C_{21}H_{22}N_2O_2$; m.w. 334.19; col. rhomb. f.al.; m.p. 268; b.p. 270 [6]; s.al.; s.w.; used in rat poisons, in medicine.

strychnine, hydrochloride. $C_{21}H_{22}N_2O_2 \cdot HCl \cdot 2H_2O$; m.w. 406.68; col. trim. efflor.

strychnine, nitrate. $C_{21}H_{22}N_2O_2 \cdot HNO_3$; m.w. 397.20; col. need.

strychnine, sulfate. $(C_{21}H_{22}N_2O_2)_2 \cdot H_2SO_4 \cdot 5H_2O$; m.w. 856.53; col. monocl. pr.; m.p. anh. 200.

stucco. Colored plaster mixed with a solution of size; used as a wall covering.

stuffing. Incorporation of oil or fat (in non-emulsion form) into leather to make it soft and pliable.

stunt (dunt). Cracking or splitting of ceramics on cooling.

styphnic acid (2, 4, 6-trinitroresorcinol). $(NO_2)_3C_6H(OH)_2$; m.w. 245.05; yel. hex. pr. f.acet.; m.p. 180; s.al.

stypticin. See cotarnine, hydrochloride.

styptol. See cotarnine, phthalate.

styracin (γ-phenylallyl cinnamate; cinnamyl cinnamate). $C_{18}H_{18}O_2$; m.w. 264.12; need. or pr.; m.p. 44; i.w.

styrax (storax; Oriental sweet gum; liquid amber orientalis). A balsam; green and amber liquid or solid; used in medicine, microscopy, etc.

styrene (vinylbensene; phenylethylene; cinnamene). $C_6H_5CH:CH_2$; m.w. 104.06; col. liq.; b.p. 146; s.w.; s.al.

styrene, α-bromo- (1-bromo-1-phenylethylene; [β-bromovinyl] bensene; ω-bromostyrene). $C_6H_5CBr:CH_2$; m.w. 182.97; oil; m.p. -43.5; b.p. 160 [74].

styrene, β-bromo- (1-bromo-2-phenylethylene; [β-bromovinyl] bensene; ω-bromostyrene). $C_6H_5CH:CHBr$; m.w. 182.97.
(1) m.p. +7; i.w.; s.al.
(2) m.p. -8 to -7; b.p. 71 [6].

styrene, α-chloro- (1-chloro-1-phenylethylene). $C_6H_5CCl:CH_2$; m.w. 138.51; liq.; m.p. -23; b.p. 199; i.w.; s.al.

styrene, β-chloro- (1-chloro-2-phenylethylene; ω-chlorostyrene). $C_6H_5CH:CHCl$; m.w. 138.51; liq.; b.p. 199; i.w.; s.al.

o, β-styrenedicarboxylic acid. See cinnamic acid, o-carboxy-.

p, β-styrenedicarboxylic acid. See cinnamic acid, p-carboxy-.

styrene, o, m, or p-hydroxy-. See phenol, vinyl-.

styrene, 3-hydroxy-4-methoxy-. See besperetol.

styrene, o, m, or p-methoxy-. See anisole, vinyl-.

styrene, m-nitro- (1-nitro-3-vinylbensene). $NO_2C_6H_4CH:CH_2$; m.w. 149.06; yel. oil; m.p. -5; s.al.

styrene, o-nitro- (1-nitro-2-vinylbensene). $NO_2C_6H_4CH:CH_2$; m.w. 149.06; col. liq.; m.p. 13.5.

styrene, p-nitro- (1-nitro-4-vinylbensene). $NO_2C_6H_4CH:CH_2$; m.w. 149.06; pr.f.lgr.; m.p. 29; s.al.

Styron. Synthetic polysterene resin.

styrone. See cinnamic alcohol.

styryl ketone (1, 5-diphenyl-1, 4-pentadien-3-one; dibensalacetone; cinnamone; dicinnamyl ketone; distyryl ketone). $(C_6H_5CH:CH)_2CO$; m.w. 234.11; yel. monocl. leaf. f. acet. or et.; m.p. 112; s.w.; s.al.

sub-. Prefix denoting a valency or other property, such as basicity, lower than normal, e.g. subacetate or basic acetate of lead; also denotes less of a particular atom in a compound than usual, as a suboxide.

subatomics. That division of chemistry that deals with atomic variations under varying physical conditions in the study of molecular structure.

suberane. See cycloheptane.

suberene. See cycloheptene.

suberic acid (octanedioic acid). $COOH-(CH_2)_6COOH$; m.w. 174.11; col. need. f.w.; m.p. 140; b.p. 279 [100]; s.al.

suberic acid, diethyl ester (ethyl suberate). $(CH_3CH_2CH_2COOC_2H_5)_2$; m.w. 230.17; col. liq.; b.p. 282-6; i.w.; s.al.

suberol. See cycloheptanol.

suberone. See cycloheptanone.

suberyl alcohol. See cycloheptanol.

suberylene. See cycloheptene.

subjective gloss. See gloss, contrast.

sublimation. The process whereby a solid passes directly into the state of a vapor, at atmospheric pressure, without passing thru a liquid state.

sublimed. Purified or prepared by a process of sublimation, as, for example, zinc dust.

suboxide. Compound containing less oxygen in its molecule than the basic oxide, e.g. lead suboxide, Pb_2O.

subshell. Part of electron shell whose electrons have the same azimuthal quantum number.

substituted acid. A mixed compound containing besides the carboxyl group another functional group, e.g. $Cl \cdot CH_2 \cdot COOH$, chloroacetic acid.

substituted urea. Compound that may be regarded as derived from urea, one or more hydrogen atoms being replaced by as many hydrocarbon radicals, e.g. $(C_6H_5NH)_2=C=O$.

substitution. See simple replacement.

substitution product. Hydrocarbon in which one or more hydrogen atoms have been replaced by another element or radical.

substrate. The material upon which an enzyme or fermenting agent acts.

subtractive color. Color obtained by filtering out or absorbing certain colors from white light.

successive reactions, law of. When a system passes from a less stable state to a more stable one, it reaches it by traversing intermediate conditions of progressively greater stability.

succinaldehyde (butanedial). $CHO-(CH_2)_2CHO$; m.w. 86.05; liq.; s.w.; s.al.

succinamic acid (β-carbamylpropionic acid; succinic acid monoamide). $NH_2COCH_2CH_2COOH$; m.w. 117.06; col. need. or tab.; m.p. 157; s.w.; s.al.

succinamic acid, α-amino-. See asparagine.

succinamide (butanediamide). $NH_2CO-CH_2CH_2CONH_2$; m.w. 116.06; col. need. f.w.; m.p. 243; s.w.; i.al.

succinamide, α-hydroxy-. See malamide.

succinamide, N-p-phenetyl- (pyrantin; phenosuccin). $(CH_2CO)_2NC_6H_4O-C_2H_5$; m.w. 219.11; pr.f.al.; m.p. 155; s.al.

succinic acid (butanedioic acid). $COOH-(CH_2)_2COOH$; m.w. 118.05; col. monocl.; m.p. 185; s.w.

succinic acid, acetoxy-. See malic acid, acetate.

succinic acid, acetyl-, diethyl ether (ethyl acetylsuccinate; diethyl acetylbutanedioate). $CH_3COCH(COOC_2H_5)CH_2COOC_2H_5$; m.w. 216.12; col. liq.; i.w.; s.al.

succinic acid, α-amino-. See aspartic acid.

succinic acid, bromo- (dl) (dl-2-bromobutanedioic acid). $CH_2CHBr(COOH)_2$; m.w. 196.96; col. cr.; m.p. 159; s.w.; s.al.

succinic acid, dibenzyl ester. $(CH_2COOCH_2C_6H_5)_2$; m.w. 298.14; leaf. f.al.; m.p. 44-6; b.p. 238 [14]; i.w.; s.al.

succinic acid, α, β-dibromo- (2, 3-dibromobutanedioic acid). $C_2H_2Br_2(COOH)_2$; m.w. 275.86.
(d) m.p. 151-3.
(l) need. f.bs.; s.w.; s.al.
(dl) m.p. 166-7; s.w.; s.al.

succinic acid, diethyl ester (ethyl succinate). $(CH_2COOC_2H_5)_2$; m.w. 174.11; col. liq.; m.p. -21; b.p. 217.7; i.w.; s.al.

succinic acid, α, β-dihydroxy-. See tartaric acid.

succinic acid, dimethyl ester (dimethyl butanedioate; methyl succinate). $CH_3OOC(CH_2)_2COOCH_3$; m.w. 146.08; col.; m.p. 19.5; b.p. 192.8; s.al.

succinic acid, ethyl- (2-ethyl butanedioic acid; 1, 2-butanedicarboxylic acid). $(COOH)CH(C_2H_5)CH_2COOH$; m.w. 146.08; col. pr.; m.p. 98; s.w.; s.al.

succinic acid, ethylene-. See 1, 2-cyclobutanedicarboxylic acid.

succinic acid, ethyl-, methyl ester. $C_2H_5OOC(CH_2)_2COOCH_3$; m.w. 160.09; col. liq.; m.p. < -20; b.p. 208.2; i.w.; s.al.

succinic acid, formyl-, lactone. See aconic acid.

succinic acid, hydroxy-. See malic acid.

succinic acid, α-hydroxy-α-methyl-. See citramalic acid.

succinic acid, isopropylidene-. See teraconic acid.

succinic acid, methyl-. See pyrotartaric acid.

succinic acid, methylene-. See itaconic acid.

succinic acid, monoamide. See succinamic acid.

succinic acid, piperazinium salt. $C_6H_{14}N_2 \cdot C_4H_6O_4$; m.w. 204.14; wh. cr.; s.w.; s.al.

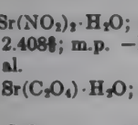
succinic acid, p-phenylphenacyl ester. $(CH_2COOCH_2COC_6H_4C_6H_5)_2$; m.w. 506.20; m.p. 208.

succinic acid, tetrahydroxy- (tetrahydroxybutanedioic acid; dihydroxytartaric acid). $(COOH)C(OH)_2-C(OH)_2COOH$; m.w. 182.05; wh. cr.; m.p. 114-5.

succinic acid, tetramethyl- (tetramethylbutanedioic acid; 2, 3-dimethyl-2, 3-butanedicarboxylic acid). $HOOC-C(CH_3)_2C(CH_3)_2COOH$; m.w. 174.11; cr.; m.p. 190.2; s.al.

succinic anhydride (butanedioic anhydride). $(CH_2CO)_2O$; m.w. 100.03; col. need. f.al.; m.p. 119.6; b.p. 261; s.w.; s.al.

succinic anhydride, amylene.



$C_5H_9HC-C=O$

m.w. 168.09; lt. yel.; sp.gr. 1.083 [20]; b.p. 140-190 [20mm].

succinimide (butanimide; 2, 5-pyrrolidinedione). $(CH_2CO)_2NH$; m.w. 99.05; octahdr. col. need. f. acet.; m.p. 124-6; b.p. 288; s.w.; s.al.

succinite. See amber.

succinonitrile (butanedinitrile; ethylene cyanide). $CNCH_2CH_2CN$; m.w. 80.05; m.p. 54.5; b.p. 267; s.w.; s.al.

succinyl chloride (butanedioyl chloride). $(CH_2COCl)_2$; m.w. 154.95; col. fum. liq. or cr.; m.p. 17; b.p. 192.

Suchar. Activated carbon.

sucrose (cane sugar; saccharose). $C_{12}H_{22}O_{11}$; m.w. 342.17; col. monocl.; s.w.; the most commonly used sugar in the home and industry.

sucrose octaacetate. $C_{12}H_{14}O_3(OOC-CH_3)_8$; m.w. 678.29; sp.gr. 1.28 (fused); m.p. 79-84; b.p. 260 [0.1]; i.w.; an adhesive producing parchment-like surfaces on paper; a denaturant.

sudorific. See diaphoretic.

suet. The fat of the sheep, chiefly from about the kidneys, contains 70% stearin and palmitin and 30% olein; m.p. 48.5-50.5 (mutton suet); i.w.; s.al.; an ointment base.

suet, benzoinated. Suet mixed with benzoin to retard rancidity; used in medicine.

sugar. Any of the many sweet or sweetish carbohydrates which are ketonic or aldehydic derivatives of the higher alcohols; commonly refers

to sucrose (q.v.), a disaccharide obtained from cane, beets, grapes.

sugar cane wax. A sugar cane by-product; m.p. 55-62; s.g. 0.96; a substitute for carnauba wax.

sugar of lead. See lead acetate, $Pb(C_2H_3O_2)_2 \cdot 3H_2O$.

sugar of milk. See lactose.

suint. Fat or grease found in wool.

sulfamic acid. $HO \cdot SO_2 \cdot NH_2$; m.w. 97.08; rhombic cryst.; sp.gr. 2.126; m.p. 205 d.; s.w.; s.al.; strongly acidic; an acidimetric standard in analytical work; used to remove nitrites after diazotization in making azo dyes and lake pigments; an intermediate for chemical syntheses.

sulfamide. $SO_2(NH_2)_2$; m.w. 96.11; rhomb. pl.; m.p. 91.5; b.p. d. 250; s.w.; s.al.

sulfanilic acid (p-aminobenzenesulfonic acid; p-anilinesulfonic acid). $NH_2 \cdot C_6H_4SO_3H \cdot H_2O$; m.w. 191.14; col. rhomb. pl. or monocl. cr. ($+2H_2O$); s.al.

sulfarsenol. See sulfarsphenamine.

sulfarsphenamine (3:3-disodium-4:4-diaminodihydroxyarsenobenzene-N-dimethylene sulfonate; sulfarsenol). $(NaOSO_2CH_2NHOHC_6H_3As—)_2$; m.w. 598.09; orange-yellow water soluble powder used in medicine for treatment of syphilis.

sulfate. Salt of sulfuric acid, e.g. sodium sulfate, Na_2SO_4.

sulfate, per-. Salt of persulfuric acid, e.g. potassium persulfate, $K_2S_2O_8$.

sulfate process. Process of making paper from woodchips using a cooking liquor containing caustic soda, sodium sulfide, soda ash, and sodium sulfate.

sulfhydrate. See hydrosulfide.

sulfide. Compound of sulfur and another element or radical, e.g. lead sulfide, PbS.

sulfide, 2-benzothiazyl 2, 4-dinitrophenyl. See benzothiazole, 2-(2, 4-dinitrophenylthio)-.

sulfide, bis-β-chloroethyl. See sulfide, β, β′-dichloroethyl.

sulfide, bis (dimethylthiocarbamyl) (tetramethylthiuram [mono] sulfide). $[(CH_3)_2NCS]_2S$; m.w. 208.09; yel. cr.; m.p. 107; i.w.; s.al.

sulfide, bis-β-hydroxyethyl. See ethanol, 2, 2′-thiodi-.

sulfide, bis (β-methylbutyl) (di-act-amyl sulfide; 2-methyl-1-[β-methylbutylthio]-butane). $[CH_3CH_2CH(CH_3)CH_2]_2S$; m.w. 174.23; m.p. 95-8 [15].

sulfide, bis (1-piperidylthiocarbonyl) (dicyclopentamethylenethiuram monosulfide). $(C_5H_{10}NCS)_2S$; m.w. 288.35; yel. cr.; m.p. 121; i.w.; s.al.

sulfide, 4, 4′-diaminodiphenyl. See aniline, p, p′-thiodi-.

sulfide, di-act-amyl. See sulfide, bis (β-methylbutyl).

sulfide, dibenzyl. See benzyl sulfide.

sulfide, dibutyl. See butyl sulfide.

sulfide, β, β′-dichloroethyl (1-chloro-2-[β-chloroethylthio] ethane; bis-β-chloroethyl sulfide; 2, 2′-dichlorodiethyl sulfide; mustard gas; yperite; yellow cross liquid). $(ClCH_2CH_2)_2S$; m.w. 159.04; col. oily liq. or pr.; m.p. 13-4; b.p. 215-7; s.al.

sulfide, diethyl. See ethyl sulfide.

sulfide, diisoamyl. See isoamyl sulfide.

sulfide, diisobutyl. See isobutyl sulfide.

sulfide, diisopropyl. See isopropyl sulfide.

sulfide, dimethyl. See methyl sulfide.

sulfide, diphenyl. See phenyl sulfide.

sulfide, dipropyl. See propyl sulfide.

sulfide, divinyl. See vinyl sulfide.

sulfide, ethyl methyl (methylthioethane). $CH_3SC_2H_5$; m.w. 76.12; liq.; m.p. −104.8; b.p. 66; i.w.; s.al.

sulfion. The bivalent S^{--} or SO_4^{--} ion.

sulfite. Normal salt of sulfurous acid, e.g. sodium sulfite, Na_2SO_3.

sulfite liquor. A paper by-product used in manufacture of alcohol, adhesives, etc.

sulfite process. Process of treatment of wood chips with bisulfite under heat and pressure to remove impurities from cellulose to be used in paper-making, etc.

sulfite pulp. Paper pulp made by the sulfite process.

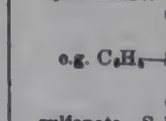
sulfobenzide. See phenyl sulfone.

sulfocarbolate. Compound of phenolsulfonic acid, $C_6H_5SO_3H$.

sulfocyanic acid. See thiocyanic acid.

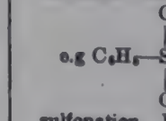
sulfonal. See propane, 2, 2-bis (ethylsulfonyl)-.

sulfonamide. An amide of sulfonic acids,



e.g. $C_6H_5—SO_2—NH_2$.

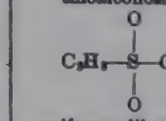
sulfonate. Salt or ester of sulfonic acids,



e.g $C_6H_5—SO_2—ONa$.

sulfonation. Introduction of the sulfonic group, $—SO_3H$, into an organic compound, in which it attaches to a carbon or nitrogen atom.

sulfone (alkyl sulfonic acid). A compound of the general formula $R—SO_2H$, an oxidation product of thioalcohols or thioethers, e.g.



$C_2H_5—SO_2—OH$.

sulfone, dibenzyl. See benzyl sulfone.

sulfone, diethyl. See ethyl sulfone.

sulfone, diphenyl. See phenyl sulfone.

sulfone, dipropyl. See propyl sulfone.

sulfone, ethylenebisphenyl. See ethane, 1, 2-bisphenylsulfonyl-.

sulfone, ethyl phenyl (ethylsulfonylbensene). $C_2H_5SO_2C_6H_5$; m.w. 170.14; monocl. pl. f. et.; m.p. 42; b.p. >300; s.w.; s.al.

sulfone, pentane-γ, γ-diethyl. See tetronal.

sulfonic acid. Derivative of hydrocarbons in which one or more sulfonic acid radicals ($—SO_2OH$) have been introduced to replace hydrogen. The sulfur atom is directly united to a carbon atom, e.g. $C_6H_5—SO_2OH$.

sulfonic acid, alkyl. See sulfone.

sulfonic acid, chloro- (sulfuric chlorohydrin). SO_2ClOH; m.w. 116.52; br., oily liq.; sp.gr. 1.784; b.p. 151.5°; s.w.; s.al.; used in the manufacture of intermediates, synthetic drugs; saccharin, and poison gas.

sulfonic acid, green. See green acid.

sulfonic acid, methyl-. See methanesulfonic acid.

sulfonic acid, petroleum (petroleum sludge acid). Complex mixture of sulfonic acids of aromatic hydrocarbons, cycloparaffins and high molecular weight paraffins, obtained from petroleum refinery sludge.

sulfonium salt. Addition product of thioethers and alkyl halides, e.g. $(CH_3)_3SI$.

sulfonmethane. See propane, 2, 2-bis-(ethylsulfonyl)-.

sulfonyl chloride, methane. See methane sulfonyl chloride.

Sulforon. Wettable sulfur used in agricultural sprays.

sulfosalicylic acid. $C_6H_3OH \cdot COOH \cdot SO_3H$; m.w. 218.11; wh. cryst. sol.; m.p. 100-110; s.w.; s.al.; a reagent used in testing for albumin.

sulfoxide, dibenzyl. See benzyl sulfoxide.

sulfoxide, diethyl. See ethyl sulfoxide.

sulfur (amorphous) (γ). S_8; m.w. 256.48; pa. yel. amor.; s.g. 1.92; m.p. ca. 120; b.p. 444.6; i.w.; an allotropic form of sulfur.

sulfur (monoclinic) (β). S_8; m.w. 256.48; monocl. pa. yel.; s.g. 1.96; m.p. 119; b.p. 444.6; i.w.; s.al., an allotropic form of sulfur.

sulfur (rhombic) (α). S_8; m.w. 256.48; rhomb. yel.; s.g. 2.07; m.p. 112.8; tr.-mcl. 95.5; b.p. 444.6; i.w.; s.al.; an allotropic form of sulfur.

sulfur bromide, mono-. S_2Br_2; m.w. 223.95; red. liq.; s.g. 2.635; m.p. −46; b.p. 54 [0.2].

sulfur chloride. See sulfur chloride, mono-.

sulfur chloride, di-. SCl_2; m.w. 102.97; dk. red liq.; s.g. 1.621 [14]; m.p. −78; b.p. 59.

sulfur chloride, mono-. S_2Cl_2; m.w. 135.03; yelsh. red. liq.; s.g. 1.678; m.p. −80; b.p. 135.6.

sulfur chloride, tetra-. SCl_4; m.w. 173.89; yel. br. liq.; m.p. −30; b.p. d. −15.

sulfur chloride, trichloromethyl-. See methyl mercaptan, perchloro-.

sulfur chloroiodide. SCl_2I; m.w. 407.18; red yel. pr.

sulfur, colloidal. Sulfur which is fine enough to remain suspended in water, produced by mechanical or chemical means; used pharmaceutically.

sulfur color. A dye, any shade but red, made by heating an organic compound with sulfur or sodium sulfide and applied to vegetable fibers in a sodium sulfide solution.

sulfur, crude. 99.5-99.9 per cent. pure sulfur; free from arsenic, selenium and tellurium.

sulfur dye. See sulfur color.

sulfur, flour. Sulfur produced by grinding crude sulfur; fineness is 50-99 per cent. thru 200-mesh and up to 99 per cent. thru 300-mesh; used in vulcanizing rubber; in dyes, gunpowder, agricultural dusts and compounds.

sulfur fluoride, hexa-. SF_6; m.w. 146.06; col. gas; s.g. 6.50 g/l, lq. 1.91; m.p. −50.8; b.p. −63.8 subl.; s.w.; s.al.

sulfur fluoride, mono-. S_2F_2; m.w. 102.12; col. gas; s.g. lq. 1.5 [−100]; m.p. −105.5; b.p. −99.

sulfur fluoride, tetra-. SF_4; m.w. 108.06; gas; m.p. −124; b.p. −40.

sulfur iodide. SI_6; m.w. 793.58; gray-blk. cr.

sulfur, lac (lac sulfuris; milk of sulfur; precipitated sulfur). A tasteless, odorless light amorphous powder; made by precipitating sulfur from polysulfide solutions (such as sulfur dissolved in calcium hydroxide) by sulfuric acid, containing up to 45 per cent. calcium sulfate; used pharmaceutically.

sulfur, milk of. See sulfur, lac.

sulfur nitride. N_4S_4; m.w. 184.27; monocl. or.-red; s.g. 2.22 [15]; m.p. 179 subl.; b.p. exp. 160; s.al.; i.w.

sulfur oxide, di-. SO_2; m.w. 64.06; col. gas or liq.; suffoc. odor; s.g. 2.927 g/l, lq. 1.434 [0]; m.p. −72.7; b.p. −10.0; s.w.; s.al.

sulfur oxide, hept-. S_2O_7; m.w. 176.12; visc. liq. or need.; m.p. 0; b.p. subl. 10.

sulfur oxide, sesqui-. S_2O_3; m.w. 112.12; bl. grn. cr.

sulfur oxide, tri- (α). SO_3; m.w. 80.06; trim. col. cr. or liq.; s.g. 2.75, liq. 1.925 [15]; m.p. 16.83; b.p. 44.8.

sulfur oxide, tri- (β). $(SO_3)_3$; m.w. 160.12; silky fibrous need.; s.g. lq. 1.97; m.p. 32.2 [sub]; b.p. 44.6, (subl. 50).

sulfur oxydichloride, pent- (pyrosulfuryl chloride). $S_2O_5Cl_2$; m.w. 215.03; col. liq.; s.g. g. 9.6 g/l, lq. 1.818; m.p. −37-9; b.p. 140.

sulfur oxytetrachloride, mon-. S_2OCl_4; m.w. 221.95; deep red liq.; s.g. 1.656 [0]; b.p. 60.

sulfur oxytetrachloride, tri-. $S_2O_3Cl_4$; m.w. 253.95; rhomb. need. or pl., wh.; m.p. 57 d.

sulfur, precipitated. See sulfur, lac.

sulfur, roll. Refined sulfur cast into convenient sizes; used in burning for curing, fumigating, preserving or bleaching effects, and used chemically.

sulfur, vegetable. See lycopodium.

sulfur, wettable. Sulfur which has been treated so that it is easily dispersible in water.

sulfuric acid. H_2SO_4; m.w. 98.08; col. oily liq. or hex. cr.; s.g. 1.834; m.p. 10.49; b.p. 330 (98.3%) d.; s.w.; the most important industrial acid, used in the manufacture of inorganic and organic acids, synthetic drugs, technical gases; an important laboratory reagent; a nitrating, sulfonating, pickling and drying agent; used in preparing soluble phosphates.

sulfuric acid. $H_2SO_4 \cdot H_2O$; m.w. 116.09; col. liq. or monocl. pr.; s.g. 1.788; m.p. 8.62; b.p. 290; s.w.

sulfuric acid. $H_2SO_4 \cdot 2H_2O$; m.w. 134.11; col. liq.; s.g. 1.650 [8]; m.p. −38.9; b.p. 167; s.w.

sulfuric acid. $H_2SO_4 \cdot 4H_2O$; m.w. 170.14; m.p. −24.5; s.w.

sulfuric acid, methyl- (hydrogen methyl sulfate; acid methyl sulfate). CH_3HSO_4; m.w. 112.09; oil.; m.p. < −30; s.w.; s.al.

sulfuric acid, nitrosyl-. See nitrosylsulfuric acid.

sulfuric acid, per- (peroxydisulfuric acid). $H_2S_2O_8$; m.w. 194.14; hyg. cr.; m.p. 65 d.; s.al.

sulfuric acid, peroxymono- (dipersulfuric acid). H_2SO_5; m.w. 114.08; wh. cr.; m.p. 45 d.

sulfuric acid, pyro-. $H_2S_2O_7$; m.w. 178.14; col. cr., hyg.; s.g. 1.9; m.p. 35.

sulfuric chlorohydrin. See sulfonic acid, chloro-.

sulfuric ether. See ethyl ether.

sulfuric oxychloride (sulfuryl chloride). SO_2Cl_2; m.w. 134.97; col. liq.; s.g. 1.6674; m.p. −54.1; b.p. 69.1.

sulfuric oxyfluoride (sulfuryl fluoride). SO_2F_2; m.w. 102.06; col. gas.; s.g. 3.72 g/l; m.p. −120 [65]; b.p. −52; s.w.; s.al.

sulfurous acid. H_2SO_3; m.w. 82.08; in soln only; s.w.; s.al.

sulfurous oxybromide (thionyl bromide). $SOBr_2$; m.w. 207.89; or.-yel. liq.; s.g. 2.68 [15]; m.p. −50; b.p. 138 [721].

sulfurous oxychloride (thionyl chloride). $SOCl_2$; m.w. 118.97; col. yel. liq.; s.g. 1.638; m.p. −105; b.p. 78.8.

sulfurous oxyfluoride (thionyl fluoride). SOF_2; m.w. 86.06; col. gas.; s.g. 2.93; m.p. −110; b.p. −30.

sulfuroxychlorobromide. $SOClBr$; m.w. 163.43; yel.; s.g. lq. 2.31; b.p. 115 d.

sulfurous acid, hypo-. $H_2S_2O_4$; m.w. 130.14; yel.; known only in solution and salts.

sulfuryl chloride. See sulfuric oxychloride.

sulfuryl fluoride. See sulfuric oxyfluoride.

sumac. Leaves and twigs of various plants of the Rhus family; used in dyeing, tanning, and in medicine.

sumac wax. See wax, Japan.

Sumatra camphor. See d-borneol.

sumbul (musk root). Dried rhizome and root of ferula sumbul; used in medicine and perfumes.

Sumptner principle. Every part of the interior of a sphere, having perfectly diffusing walls and illuminated from within, appears equally illuminated when observed thru an opening.

sunflower oil. See oil, sunflower.

Sunoco spirits. Petroleum solvents; b.p. 148.9-207.2° C.

Sunolith. See Ponolith.

sunstone (heliolite). A gem stone of feldspar.

super. Prefix indicating a larger than normal proportion of some constituent or radical.

Super-Beckacite. Pure phenolic synthetic resin.

superchlorination. Addition of an excess of chlorine to water to kill bacteria, the excess being removed by filtering thru activated charcoal.

supercooled liquid. A liquid existing in an unstable condition at a lower temperature than its freezing point for the prevailing pressure, a condition resulting from slow and continuous cooling.

superlattice. A lattice in which atoms of

different kinds form an ordered structure.

Superlith. See Ponolith.

superpalite. See diphosgene.

superphosphate. A soluble calcium phosphate fertilizer; a mixture of monocalcium orthophosphate and calcium sulfate, obtained by treating the insoluble tricalcium phosphate with sulfuric acid.

superphosphate, double. The treatment of the insoluble tricalcium phosphate rock, $Ca_3(PO_4)_2$, with phosphoric acid producing monocalcium phosphate, $Ca(H_2PO_4)_2$.

supersonic radiation. Sound waves of a frequency considerably above the highest audible frequency.

suprarenals. Two small glands above the kidneys storing vitamin C.

suprarenine. See adrenaline.

Supraresen. A synthetic tar-acid resin.

surd. An irrational number or quantity; an indicated root not capable of extraction.

surface-active. Designation for substances that tend most strongly to concentrate on surfaces.

surface catalysis (heterogeneous catalysis). Reaction which takes place especially rapidly on the surface of a solid catalyst.

surface combustion. Rapid and complete burning of gas or vapor-air mixtures in theoretical proportions for complete combustion, without flame, at the surface of an incandescent solid.

surface density of electricity. Quantity of electricity per unit area of a surface.

surface density of magnetism. Quantity of magnetism per unit area of a surface.

surface resistance. The ratio of the voltage between two electrodes to the current which flows thru the surface layers of a conductor of very high resistance.

surface resistivity. A quantity equal to four times the resistance between two electrodes covering opposite faces of a cube when the volume resistance is so high that practically all of the current flows thru the surface layers.

surface, specific. See specific surface.

surface tension (interfacial tension). The tendency of the surface of a liquid to contract to the smallest area possible under the existing circumstances, due to the intermolecular attraction of the molecules in the surface behind it, as evidenced in the assuming of spherical form by bubbles and droplets of water and the assuming of the smallest possible area by soap films generally. It is defined as the force in dynes acting on a line one centimeter long lying in the surface of the liquid.

surfacer. Material used to build up or improve a coated surface.

Sulfatate. A sulfonated hydrocarbon used as a wetting agent in the textile, paper, cosmetic and leather industries.

Surfax. A combined wetting-out agent and detergent in powdered form which may be used in acid or alkaline medium, used for textile purposes.

Surfax W.O. An oil employed as a wetting-out and softening agent and has no detergent properties, used for textile purposes.

Surfex. Treated calcium carbonate which has special dispersion and gloss properties, used in surface coatings such as paint.

susceptibility, magnetic. Ratio of intensity of magnetization produced in a substance to the intensity of magnetic field to which it is subjected.

suspensoid (hydrophobe). A colloidal solution in which the suspended particles do not tend to combine with the suspending medium.

suspension. A mechanical mixture of fine particles and a liquid, the former settling when the mixture is allowed to stand.

Sutherland law. A law expressing the viscosity coefficient of a gas in terms of its absolute temperature.

sweet. Designation for petroleum compounds that are relatively free from sulfur compounds hence have no disagreeable odor.

sweet oil. See oil, olive.

sweeting. The process of removing or neutralizing odoriferous constituents of petroleum products.

syeporite. See cobalt sulfide (ous).

Sylphrap. See Cellophane.

sylvan. See silvan.

sylvanite (graphic tellurium). [Au, Ag]Te; sp.gr. 7.9-8.3; gr.-wh.

d-sylvestrene (d-1, 8[9]-m-menthadiene). $C_{10}H_{16}$; m.w. 136.12; liq.; b.p. 177; i.w.; s.al.

sylvic acid. See abietic acid.

sylvinite (hartsalz, sylvite). See potassium chloride.

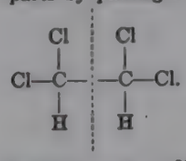
sylvite (sylvine). A mineral, KCl; cub., col., wh., blsh. or yelsh. red; sp.gr. 1.988; hardness 2.

symbiosis. The living together of two dissimilar organisms, interdependently and to their mutual benefit.

symbol, chemical. Letter or letters representing an element, chemical constant, etc., thus Al represents aluminum and Na represents sodium.

symbols. *For lists of symbols and abbreviations consult the appended sections.*

symmetrical molecule. A molecule which can be divided into two identical parts by passing a plane thru it, e.g.



symmetry number. Number of different planes of symmetry of a body or group of atoms.

symmetry plane. Plane of division such that any line perpendicular to the plane and ending at the boundaries of the figure is bisected by the plane.

sympathetic ink. An ink whose writing is invisible until brought out by some agent such as heat or by chemical treatment.

symplasm. Protoplasmic content of bacteria whose cell walls have been dissolved or disintegrated.

Synasol. Denatured alcohol.

syncline. In geology, a folding of strata resembling a trough.

syneresis. The exudation of liquid from a gel.

syngenite. See calcium potassium sulfate.

synlastic (collastic). A synthetic lastic (q.v.), e.g. Neoprene.

Synourin. A castor oil stand oil used in paints.

syntans. Synthetic tanning agents, such as the condensation products of aldehydes and sulfonated hydroxyaromatic compounds.

Syntellac. A synthetic tar-acid resin.

Syntex. A synthetic tar-acid, alkyd or urea resin.

Synthane. A synthetic tar-acid resin.

Synthe-Copal. See gum, ester.

synthesis. The formation of a chemical compound from more elementary substances, e.g. the formation of water from hydrogen and oxygen, in contradistinction to *analysis*, or a breaking down into constituents.

synthetic chemical. A relatively complex substance formed in the laboratory entirely from elementary substances; previously nonexistent or known only as a product of nature.

synthetic resin. A complex, substantially amorphous, organic semisolid or solid material (usually a mixture) built up by the chemical interaction of comparatively simple compounds and, depending upon the temperature at which the examination is made, approximating the natural resins in various physical properties, tho not in chemical constitution and behavior toward reagents.

synthetic rubber. Caoutchouc synthesized in the laboratory; strictly speaking, a misnomer, since the physical nature rather than the precise chemical structure of natural rubber is duplicated.

syntonin. See fibrin.

sysertskite. Dark variety of iridosmine (q.v.); sp.gr. 20-21.

szmikite. See manganese sulfate (ous). A mineral.

T

tabular spar. See wollastonite.

tachometer (tachymeter). Device for measuring linear or angular speeds of a body and velocity of flowing liquids; indicates r.p.m. of a rotating shaft.

tachymeter. See tachometer.

tack. Stickiness.

tackiness. The property of being drawn into threads when two surfaces, with a layer of the material between them, are drawn apart.

tacky. Characterization of plastic substances having a small yield value and high mobility, e.g. mucilage.

tactocatalytic. Accelerating effect of orientation on colloidal aggregation.

tactoid. Spontaneously oriented particle, in sols, forming birefringent spots.

tailings. In flour-milling, the product left after grinding and bolting middlings.

tails. High boiling impurities less volatile than the solvent being distilled.

Talbot bands. Interference bands in prism spectrum produced when half of the opening is blocked by a thin glass plate whose edge is parallel to the prism edge.

Talbot law. If two or more illuminated areas are seen at regular intervals, each one seen in turn for a certain time, then there is a definite frequency of alternation for which the resultant color seen is invariable identical with that which would be seen if all the lights were seen at once at their mean intensities.

talc (talcum, soapstone, steatite). A mineral; $Mg_3(Si_2O_5)_2 \cdot Mg(OH)_2$; monocl., wh., grnsh. wh., lt. grn.; sp.gr. 2.7-2.8; i.w.; hardness 1.0-1.5; a dry lubricant and filler; used in adulterating chalk, in manufacture of paints, paper, white polishes and in sizing and bleaching cottons.

talcum. See talc.

tallol (tall oil; talloel). Liquid resinous saponifiable oily by-product of the sulfite process.

tallow. The fat obtained by extraction or rendering of solid animal fats, the best grades being "edible" and "white"; used in tanning, engraving and lithography, and as a food.

tallow, Japan. See wax, Japan.

tallow oil. See oil, tallow.

tallow, vegetable. Amorphous solid obtained from fruit of the Chinese tallow tree; sp.gr. 0.884-0.945; used in soap, candles, lubricant, leather manufacture; a foam preventive.

tamarind. The preserved pulp of a fruit of East and West Indies; used as a laxative and in sauce-making.

tangent galvanometer. Galvanometer having a fixed field coil so that tangent of deflection varies directly with current.

tangent meter. See derivator.

tangerine oil. See oil, mandarin.

tankage. The product obtained by evaporating tank water in abattoir by-product and garbage disposal plants, used as fertilizer.

tannage, bark. Tanning of leather with tannin containing barks.

tannage, chrome. Tanning of leather with chromium compounds.

tannage, combination. Tanning of leather with barks containing tannin and with chromium compounds.

tannase. A diastase found in nut-galls, capable of hydrolysing tannin; also an ensyme produced by certain mold fungi which hydrolyses gallotannin forming gallic acid.

tannic acid (digallic acid; gallotanic acid). A constituent of tea, sumac, etc.; a sugar ester containing glucose & gallic acid; used for burns and in textile and tanning industries.

tannin. One of a group of vegetable products which dissolves in water to produce a solution of astringent taste and produces blue-black or green colorations with solutions of iron salts, used in tanning and writing inks, e.g. oak bark; see also m-digallic acid.

tanning. The treatment of hides and calf-skins wherein the astringent principles enter into combination with the collegen part of the skins, thus producing leather.

tanning extract. The liquor obtained by extraction of ground woods and pulps; an important portion of materials used by the tanner.

tanstuff. Material, containing tannins, used in tanning leather.

tantalite. A mineral, $(Fe, Mn)[(Cb, Ta)O_3]_2$; rhomb., blk. to redsh. br.; sp.gr. 6.5-8.20; hardness 6.

tantalum. Ta; at. wt. 180.88; cub. gray-blk. met. or blk. powd.; s.g. met. 16.6, powd. 14.491; m.p. 2850; b.p. ca. 4100; i.w.; used in alloys and incandescent lamp filaments.

tantalum bromide. $TaBr_5$; m.w. 580.98; yel. cr.; m.p. 240; b.p. 320; s. abs. al.

tantalum carbide. TaC; m.w. 193.4; a very hard material which is extremely resistant to chemical action except at high temperatures; formed by heating tantalum oxide with carbon at high temperatures.

tantalum chloride. $TaCl_5$; m.w. 358.69; lt.-yel. cr. powd.; s.g. 3.68 ^{27}; m.p. 221; b.p. 242 s. abs. al.

tantalum fluoride. TaF_5; m.w. 276.40; tetr. col.; s.g. 4.74; m.p. 96.8; b.p. 229.5; s.w.

tantalum hydroxide. $Ta(OH)_5$; m.w. 266.44; wh. amor.; i.w.

tantalum nitride. Ta_3N_5; m.w. 614.24; amor. yel.; i.w.

tantalum oxide, di-. TaO_2; m.w. 213.40; br. powd.; i.w.

tantalum oxide, pent-. Ta_2O_5; m.w. 442.80; rhomb. col.; s.g. 8.735 $^{21.2}$; m.p. 1470 d.; i.w.

tantalum oxide, tetr-. Ta_2O_4; m.w. 426.80; dk. gray powd.; i.w.

tantalum potassium fluoride. TaK_2F_7; m.w. 392.60; rhomb. col.; s.w. d.

tantalum sulfide. Ta_2S_4; m.w. 491.04; i.w.

Tantiron. An iron alloy containing 15% silicon; see duriron.

tap cinder. The basic iron silicate slag flowing thru the tap hole of the puddling furnace.

tapioca. See tapioca starch.

tapioca flour. See tapioca starch.

tapioca starch. A starchy body obtained from roots of a plant cultivated in West Indies and Malaya; the flour is used for starch-making, as an adhesive, and in textile industry. Two varieties exist: "sweet" and "bitter."

tapiolite. A mineral, $Fe(Ta, Nb)_2O_6$; tetr., blk.; sp.gr. 7.3-7.8; hardness 6.

tar. See tar, crude.

tar-acid oil. See oil, tar-acid.

tar-acid resin. Any synthetic resin obtained by the condensation of a tar acid, or a mixture of tar acids, with an aldehyde; the tar acid may be phenol, cresols, xylenols or mixtures.

tar bases, crude. The mixture of those constituents of coal tar which can be extracted from the lower boiling distillates by dilute mineral acid; consists essentially of basic compounds of the pyridine series.

tar, coal. See coal tar.

tar, crude. A bituminous product, viscous or liquid, resulting from the destructive distillation of organic materials.

tar fog. Minute vesicles of gas which are covered with a film of tar.

tar oil. See oil, tar.

tar, oil-gas. Tar made by cracking oil vapors at high temperatures (in oil gas manufacture).

tar, pine. See pine tar.

tar, refined. High temperature coal tar from which the water and more volatile oils have been removed by distillation.

tar, road. A product prepared by treating coal tar in such a manner that it conforms to a specification which defines its applicability for some branch of road work.

tar, Stockholm. See Stockholm tar.

tar value. Percentage by weight of tar obtained by treating lubricating oil, diluted with benzene, with alcoholic sodium hydroxide.

tar, water-gas. See water-gas tar.

tar wood. See grindelia.

tarapacaite. See potassium chromate.

tare. Weight of an empty container or vehicle.

target. See anticathode.

tartar emetic. See potassium antimonyl tartrate.

d-tartaric acid (d-2, 3-dihydroxybutanedioic acid; d-a, β-dihydroxysuccinic acid). $HOOC(CHOH)_2COOH$; m.w. 150.05; col. monocl.; m.p. 170; s.w.; s.al.

dl-tartaric acid (racemic acid). $HOOC(CHOH)_2COOH \cdot H_2O$; m.w. 168.06; col. tricl.; m.p. $-H_2O$ 100, anh. 204-6; s.w.

i-tartaric acid (mesotartaric acid). $HOOC(CHOH)_2COOH$; m.w. 150.05; col. tab.; m.p. anh. 140; s.w.; s.al.

tartaric acid, diamyl-. $(C_5H_{11})_2C_4H_4O_6$; m.w. 290.20; straw colored; sp.gr. 1.054 ^{20}; decomposes on heating.

d-tartaric acid, dibutyl ester (dibutyl d-2, 3-dihydroxybutanedioate). $(CHOH\text{-}COOC_4H_9)_2$; m.w. 262.17; pr.; m.p. 22.5; b.p. 203 ^{10}.

d-tartaric acid, diethyl ester (diethyl d-2, 3-dihydroxybutanedioate; ethyl d-tartrate). $[CH(OH)COOC_2H_5]_2$; m.w. 206.11; col. hyg. liq.; m.p. 17; b.p. 280; s.w.; s.al.

dl-tartaric acid, diethyl ester (diethyl tartrate [dl-racemic]; diethyl racemate). $C_8H_{14}O_6$; m.w. 206.11; m.p. 17; b.p. 280; s.w.; s.al.

l-tartaric acid, diethyl ester (ethyl l-tartrate). $C_8H_{14}O_6$; m.w. 206.11; b.p. 162 ^{19}

i-tartaric acid, diethyl ester (diethyl tartrate [dl-meso]). $C_8H_{14}O_6$; m.w. 206.11; m.p. 55.

d-tartaric acid, diethyl ester diacetate (ethyl diacetyl-d-tartrate; ethyl d-diacetoxy succinate). $[CH(OOCH_3)\text{-}COOC_2H_5]_2$; m.w. 290.14; monocl. cr.; m.p. 67; b.p. 291-2 ^{727}; s.w.; s.al.

tartaric acid, dihydroxy-. See succinic acid, tetrahydroxy-

d-tartaric acid, dimethyl ester (methyl d-tartrate). $(COOCH_3)(CHOH)_2\text{-}COOCH_3$; m.w. 178.08; col.; m.p. (1)48, (2)50, (3)61; b.p. 280; s.w.; s.al.

dl-tartaric acid, dimethyl ester (dimethyl dl-2, 3-dihydroxy butanedioate; methyl racemate). $(COOCH_3)\text{-}(CHOH)_2COOCH_3$; m.w. 280; s.w.; s.al.

d-tartaric acid, dinitrate (dinitrotartaric acid). $COOH(CHNO_3)_2COOH$; m.w. 240.05; need.; s.al.

d-tartaric acid, dinitro-. See d-tartaric acid, dinitrate.

d-tartaric acid, dipropyl ester (dipropyl d-2, 3-dihydroxybutanedioate; propyl tartrate). $(CHOHCOOC_3H_7)_2$; m.w. 234.14; liq.; b.p. 303; i.w.; s.al.

d-tartaric acid, monoethyl ester (ethyl hydrogen d-tartrate). $COOH\text{-}(CHOH)_2COOC_2H_5$; m.w. 178.08; col. rhomb.; m.p. 90; s.w.; s.al.

d-tartaric acid, nicotine salt. See nicotine, tartrate.

tartaric acid, pyro-. See pyrotartaric acid.

tartronic acid (2-hydroxypropanedioic acid; hydroxymalonic acid). $HO\text{-}CH(COOH)_2$; m.w. 120.03; col. pr. f. et.; s.w.; s.al.

tartronic acid, benzyl- (1-hydroxy-2-phenyl-1, 1-ethanedicarboxylic acid). $C_6H_5CH_2C(OH)(COOH)_2$; m.w. 210.08; pr.; s.w.; s.al.

taurine (2-aminoethanesulfonic acid). $H_2NCH_2CH_2SO_3H$; m.w. 125.12; tetr. need.

taurocholic acid. $C_{26}H_{45}NO_7S \cdot H_2O$; m.w. 533.43; deliq. need.; s.w.; s.al.

tauto-. A prefix indicating a tautomeric form.

tautomer. Isomeric compound produced by a reversible intramolecular rearrangement; see tautomerism.

tautomeric change. See tautomerism.

tautomerism. A reversible rearrangement of an atom or group of atoms within a molecule, e.g. the enol-keto rearrangement is one kind of tautomerism.

tawing. Using solutions of mineral salts such as alum or those of chromium in the tanning or dressing of skins; particularly in respect to glove and kid leathers.

taxine. An amorphous poisonous alkaloid; $C_{37}H_{41}O_{10}N$; m.w. 667.4; obtained from dried yew-needles; m.p. 82; s.w.

Taylor. A synthetic tar-acid resin.

tea-seed oil. See oil, tea-seed.

teal oil. See oil, sesame.

Teca. An acetate staple fiber having a crimpy or wavy form, the crimp resisting removal by such usual efforts as tension, water, and heat.

Tegin. See Xerol.

Teglac. A synthetic alkyd resin modified with natural resin acids, possessing good film-forming properties.

Tegofan. See Alloprene.

Teka oil. See oil, Teka.

Tekaol. Stand-oil extracts obtained when heavy bodied linseed oil is extracted with suitable solvents to remove soluble and less valuable

matter.

telecentric. Referring to optical device with entrance or exit pupil at infinity

Telloy. Tellurium.

telluric acid. H_6TeO_6; m.w. 229.55; cub. or monocl. col.; s.g. (cub.) 3.05, (mcl.) 5.09; m.p. $-H_2O$; s.w.

telluric acid, allo-. $(H_2TeO_4)_3$; m.w. 580.55; wh. powd.; s.g. 3.44 $^{19.5}$; m.p. d. >160; s.w.; s.al.

telluric acid, ortho-. $H_2TeO_4 \cdot 2H_2O$; m.w. 229.55; cub. or monocl. col.; s.g. 3.053-.071; m.p. $-2H_2O$, 140; s.w.; i.al.

telluric acid, ortho-. $H_2TeO_4 \cdot 6H_2O$; m.w. 301.61; hex. need.; m.p. $-4H_2O$, 10; s.w.; i.al.

telluric bismuth. See joséite.

telluride, diethyl. See ethyl telluride

telluride, dimethyl. See methyl telluride.

tellurite. See tellurium oxide, di-.

tellurium. Te_3; m.w. 255.22; rhbdr. sil.-wh. met.; s.g. 6.25; m.p. 452; b.p. 1390; i.w.; semi-metallic element of the sulfur group.

tellurium. Te_2; m.w. 255.22; amor. br.-blk.; s.g. 6.00; m.p. 452; b.p. 1390; i.w.; an allotropic form of tellurium.

tellurium bromide, di-. $TeBr_2$; m.w. 287.33; steel gray-grn. need., unst.; m.p. 210 (280); b.p. 339.

tellurium bromide, tetra-. $TeBr_4$; m.w. 447.16; or. cr.; s.g. 4.31 ^{15}; m.p. 380; m.p. 421; s.w. d.

tellurium chloride, di-. $TeCl_2$; m.w. 198.41; blk. cr. or amor., unst.; s.g. 7.05; m.p. 209 ±5 (175); b.p. 327.

tellurium chloride, tetra-. $TeCl_4$; m.w. 269.33; wh. to yel. cr., deliq.; s.g. 3.26, lq. 2.559 ^{232}; m.p. 224 (214); b.p. 414; s.w. d.; s.al.

tellurium ethyl. See ethyl telluride.

tellurium fluoride, hexa-. TeF_6; m.w. 241.50; col. gas.; s.g. 3.025 $^{-35.5}$; m.p. −36; b.p. −35.5.

tellurium fluoride, tetra-. TeF_4; m.w. 203.50; cr. wh.; m.p. subl.

tellurium fluoride, tri-. $TeF_3 \cdot 4H_2O$; m.w. 256.56; s.w.

tellurium, graphic. See sylvanite.

tellurium iodide, di-. TeI_2; m.w. 381.84; blk. cr.; i.w.

tellurium iodide, tetra-. TeI_4; m.w. 635.18; gray cr.; s.g. 8.403 ^{15}; m.p. 259; s.w.

tellurium nitrate, basic. $Te_2O_3(OH)NO_3$; m.w. 382.02; rhomb. col.; m.p. $-NO_2$, 190.

tellurium oxide, di- (tellurite). TeO_2; m.w. 159.50; tetr. or rhomb. wh.; s.g. tetr. 5.67 ^{15}; rhomb. 5.91 ^{0}; b.p. subl. 450; i.w.

tellurium oxide, mon-. TeO; m.w. 143.50; amor., blk.; i.w.

tellurium oxide, tri-. TeO_3; m.w. 175.50; or. cr.; s.g. 5.08 $^{10.5}$; i.w.; i.al.

tellurium oxysulfate. $(TeO_2)_2SO_3$; m.w. 399.06; rhomb. col.; s.g. 4.7; m.p. d. 500.

tellurium sulfide. TeS_2; m.w. 191.62; red-blk., amor. powd.; i.w.

tellurium sulfotrioxide. $TeSO_3$; m.w. 207.56; amor. deep red; m.p. soft. 30.

tellurous acid. H_2TeO_3; m.w. 177.52; rhomb. or monocl. col.; m.p. d. 40; i.w.; i.al.

tempera paint. A dry color mixed with diluted glue or size and chalk or clay.

temperature. The "hotness" or "coldness" of a body; the property which determines the flow of heat; in reference to the kinetic theory of matter, the condition of a body due to the velocity of random atomic and molecular movement.

temperature, absolute. Temperature on the absolute, thermodynamic or Kelvin scale in which the temperature is based upon the average molecular kinetic energy of a perfect gas, zero on this scale being −273.13° C.; temperature equal to centigrade temperature plus 273.13.

temperature, black-body. See black body temperature.

temperature coefficient. Increment of a value that is a function of temperature due to unit change of temperature.

temperature, consolute. See critical solution temperature.

temperature, critical. See critical temperature.

temperature, critical solution. See critical solution temperature.

temperature, Debye characteristic. See Debye characteristic temperature.

temperature, dry bulb. See dry bulb temperature.

temperature, ignition. See ignition temperature.

temperature, inversion. See inversion temperature.

temperature, magnetic transformation. See Curie point.

temperature resistance coefficient. The ratio of the change of resistance in a wire due to a change of temperature of 1° C. to its resistance at 0° C.

temperature, singular. See singular temperature.

temperature, wet bulb. Temperature indicated by the wet bulb thermometer of a standard sling psychrometer or its equivalent.

tempering (drawing). Reheating of hardened steel to a temperature below the critical point to relieve brittleness and internal stresses.

tempering oil. See oil, tempering.

tempering sand. See sand, tempering.

temporary hard water. See hard water, temporary.

Tenazit. A synthetic tar-acid resin.

tendering. Weakening.

Tenite. A cellulose acetate plastic, available in transparent, translucent, opaque, colored and colorless forms; thermoplastic, of excellent molding and good machining properties, resistant to oils.

tenorite. See copper oxide (ic).

tensile product. Product of ultimate tensile strength and ultimate elongation.

tensile strength (breaking stress; maximum stress; ultimate stress). Load required to break a specimen, divided by original area of cross-section.

tensimeter. An appliance used in determining vapour pressures.

Tensol. A sulfonated ether used as a dispersing and emulsifying agent in the textile and cosmetic industries.

tensor. A numerical or absolute vectorial value.

tensor analysis. Mathematical sequel to complex numbers and a generalisation of vector analysis which sets no limit on variables.

teraconic acid (2-isopropylidenebutanedioic acid; isopropylidenesuccinic acid; γ, γ-dimethylitaconic acid). $(CH_3)_2C{:}C(COOH)CH_2COOH$; m.w. 158.08; tricl. f.et.; s.w.; s.al.

terbium. Tb; at. wt. 159.2; a rare element found in monazite and gadolinite.

terbium chloride. $TbCl_3$; m.w. 265.57; wh. need.; s.g. 4.25; m.p. 588; s.w.; s.al.

terbium chloride. $TbCl_3 \cdot 6H_2O$; m.w. 373.66; col. cr., hyg.; s.w.

terbium nitrate. $Tb(NO_3)_3 \cdot 6H_2O$; m.w. 453.32; monocl. need. col.; m.p. 89.3; s.w.

terbium oxide. Tb_2O_3; m.w. 366.40; amor. wh.-or.

terbium oxide, per-. Tb_4O_7; m.w. 748.80; dk. br. or blk.

terbium sulfate. $Tb_2(SO_4)_3 \cdot 8H_2O$; m.w. 750.70; cryst.; m.p. $-8H_2O$, 360; s.w.

terebene. A mixture of hydrocarbons containing inactive camphene and dipentene, obtained commercially by treating American or French turpentine with strong sulfuric acid.

terebic acid (2, 2-dimethylparaconic acid). $C_7H_{10}O_4$; m.w. 158.08; monocl. f.al.; m.p. 174; s.w.; s.al.

terephthalaldehyde (1, 4-benzenedicarbonal). $C_6H_4(CHO)_2$; m.w. 134.05; need. f.w.; m.p. 116; b.p. 248; s.al.

terephthalaldehydic acid (p-formylbensoic acid). $CHOC_6H_4COOH$; m.w. 150.05; need. f.w.; m.p. 256; s.w.; s.al.

terephthalaldehydic acid, 3-hydroxy- (4-formyl-3-hydroxybensoic acid). $CHOC_6H_3(OH)COOH$; m.w. 166.05; need.; m.p. 234; s.w.; s.al.

terephthalic acid (1, 4-benzenedicarboxylic acid; p-phthalic acid). $CHOC_6H_4COOH$; m.w. 166.05; need. or amor.; s.al.

terephthalic acid, benzoyl- (2, 5-benzophenonedicarboxylic acid). $C_6H_5COC_6H_3(COOH)_2$; m.w. 270.08; need; m.p. 285; i.w.; s.al.

terephthalic acid, diethyl ester (ethyl p-phthalate). $C_6H_4(COOC_2H_5)_2$; m.w. 222.11; col.; m.p. 44.

terephthalic acid, 2, 3-dihydro-. See 1, 3-cyclohexadiene-1, 4-dicarboxylic acid.

terephthalic acid, 2, 5-dihydroxy- (2, 5-dihydroxy-1, 4-benzenedicarboxylic acid; 2, 5-hydroquinone dicarboxylic acid). $(HO)_2C_6H_2(COOH)_2$; m.w. 198.05; yel. cr. f.al. or et.; s.w.; s.al.

terephthalic acid, dimethyl ester (dimethyl 1, 4-benzenedicarboxylate). $C_6H_4(COOCH_3)_2$; m.w. 194.08; rhomb. f.al.; m.p. 140; s.al.

terephthalic acid, hexahydro-. See 1, 4-cyclohexanedicarboxylic acid.

terephthalic acid, mononitrile. See benzoic acid, p-cyano-.

terephthalic acid, 2-nitro-. $NO_2C_6H_2(COOH)_2$; m.w. 211.05; m.p. 270; s.w.; s.al.

terephthalonitrile (1, 4-benzenedicarbonitrile; p-phenylene cyanide). $C_6H_4(CN)_2$; m.w. 128.05; col. need. f. bs.; m.p. 222; i.w.; s.al.

terephthalyl chloride (1, 4-benzenedicarbonyl chloride; p-phthalyl dichloride). $C_6H_4(COCl)_2$; m.w. 202.95; need.; m.p. 78; b.p. 259.

Tergitol Penetrant 08. A synthetic primary alcohol sulfate used as a wetting agent and penetrant in concentrated solutions of alkalies, acids and salts.

Tergitol Penetrant 4, 7. A higher secondary alcohol sulfate used as a wetting and dispersing agent and penetrant in the textile, agricultural and rubber industries.

Tergitols. The sodium salts of sulfates of higher synthetic alcohols; wetting-agents.

terlinguaite. A mineral, Hg_2ClO; monocl., yel. to olive grn.; sp.gr. 8.723-8.728; hardness 2-3.

terminal disinfection. Fumigation.

termolecular reaction. See reaction, termolecular.

ternary system. A system having three components.

terne plate. Sheet steel coated with an alloy of lead and tin.

terpane. See p-menthane.

terpene hydrochloride. See bornyl chloride.

terpene, monocyclic. Terpene containing two double bonds and a closed chain, e.g. dipentene.

terpene, olefinic. See olefinic terpene.

terpeneless oil. See oil, terpeneless.

terpenes. Unsaturated cyclic hydrocarbons of the formula, $C_{10}H_{16}$, found in the essential oils of plants, e.g. limonene.

terphenyl (1, 4-diphenylbenzene; p-phenylbiphenyl; triphenyl; diphenylphenylene). $(C_6H_5)_2C_6H_4$; m.w. 230.11; col. leaf. f.al.; m.p. 213; s.al.

m-terphenyl. See benzene, 1, 3-diphenyl-.

α-terpinene (1, 3-p-menthadiene). $C_{10}H_{16}$; m.w. 136.12; col. liq.; b.p. α 180, β 173; i.w.; s.al.

dl-α-terpineol (dl-1-p-menthen-8-ol). $C_{10}H_{17}OH$; m.w. 154.14; colorless liquid of alcoholic structure occurring naturally in essential oils; m.p. 35; b.p. 219.8; i.w.; s.al.; used in lilac and lily artificial products.

terpin hydrate. See terpinol, hydrate.

cis-terpinol, hydrate (cis-1, 8-p-menthanediol hydrate; cis-terpin hydrate). $C_{10}H_{18}(OH)_2 \cdot H_2O$; m.w. 190.17; col. rhomb.; m.p. anh. 117.

terpinolene (1, 4 (8)-p-menthadiene). $C_{10}H_{16}$; m.w. 136.12; col. liq.; b.p. 185; i.w.; s.al.

terpinyl acetate. $C_{10}H_{17}CO_2CH_3$; m.w. 196.16; col. liq.; i.w.; s.al.; used in making perfumes.

terra alba. A term used commercially referring to kaolin, gypsum, burnt alum, magnesia, calcium sulfate, or pipe clay; referring, more correctly to almost pure calcium sulfate.

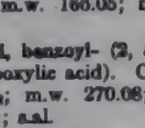
terra cotta. Baked earth or clay in buff, yellow, and red colors; used widely for ornamental work on building exteriors.

terra silicea. See infusorial earth.

terrazzo. A substance composed of fragments of colored stone mixed with cement, used for flooring.

tertiary. Term signifying three or third; in geology, the rock formation between the mesozoic or secondary and the quarternary.

tertiary alcohol. An alcohol in which the carbon atom to which the hydroxyl group is attached is also attached to three other carbon atoms, e.g.



tertiary amine. An amine in which three carbon atoms are attached to the amino nitrogen, e.g. $C_6H_5{-}N(CH_3)_2$

tertiary phosphate. See phosphate, tertiary.

Tesla coil. Helical coil, of many turns, in which very high voltages are created by means of a condenser and spark gap.

test-paper. Absorbent paper impregnated with an indicator such as litmus or turmeric; used for testing purposes.

tetraaqua stannic bisacetylacetone stannibromide. See tin stannibromide, bisacetylacetone tetraaqua-.

tetrabromoethylene. See carbon bromide, di-.

tetrachlorbenzene. See benzene, tetrachloro-.

tetrachlorethane. See acetylene tetrachloride.

tetrachlorethylene. See carbon chloride, di-.

tetrachlornaphthalene. See naphthalene tetrachloride.

tetracoline. See quinoline, 2, 5, 7-trimethyl-.

tetracosane (n). $CH_3(CH_2)_{22}CH_3$; m.w. 338.39; cr.; m.p. 51.1; b.p. 324.1; i.w.; s.al.

tetrad. An element with a valency of four.

tetradecanal, oxime. See myristaldehyde, oxime.

tetradecanamide. See myristamide.

tetradecane (n-tetradecane). $CH_3(CH_2)_{12}CH_3$; m.w. 198.23; col. liq.; m.p. 5.5; b.p. 252.5; i.w.; s.al.

tetradecane, 1-amino-. See tetradecylamine.

tetradecanenitrile. See myristonitrile.

tetradecanoic acid. See myristic acid.

tetradecanoic anhydride. See myristic anhydride.

1-tetradecanol (n-tetradecyl alcohol; myristic alcohol). $CH_3(CH_2)_{12}CH_2OH$; m.w. 214.23; opaque leaf. f.al.; m.p. 37.62; b.p. 167 ^{15}; i.w.; s.al.

tetradecanoyl chloride. See myristyl chloride.

1-tetradecene (α-tetradecylene). $CH_2{:}CH(CH_2)_{11}CH_3$; m.w. 196.22; col. liq.; m.p. −12; b.p. 246; i.w.; s.al.

n-tetradecyl alcohol. See 1-tetradecanol.

tetradecylamine (prim-n-tetradecyl amine; 1-aminotetradecane). $CH_3(CH_2)_{13}NH_2$; m.w. 213.25; m.p. 37; b.p. 162 ^{15}

tetradecyl sulfate (di-n-tetradecyl-sulfate). $[CH_3(CH_2)_{13}]_2SO_4$; m.w. 490.51; m.p. 57.8–8.0.

tetragonal. Term applied to a crystal with three mutually rectangular axes, two of which are equal.

tetrahedrite (gray copper ore, fahlers). A mineral, $4Cu_2S \cdot Sb_2S_3$; cub., st. gray to iron blk.; sp.gr. 4.4–5.1; hardness 3.0–4.5.

tetrahydrofurfuryl alcohol. See furfuryl alcohol, tetrahydro-.

tetrahydronaphthalene. See naphthalene, 1, 2, 3, 4-tetrahydro-.

tetralin. See naphthalene, 1, 2, 3, 4-tetrahydro-.

tetramethylene. See cyclobutane.

tetramethylenediamine. See putrescine.

tetramethylene glycol. See 1, 4-butanediol.

tetramethylene oxide. See furan, tetrahydro-.

tetramethylenimine. See pyrrolidine.

tetramine. Compound containing four amino, $—NH_2$, groups.

tetrapotassium pyrophosphate. See potassium phosphate, pyro-, tetra-.

tetravalent. Having a valency of four.

s-tetrazine (1, 2, 4, 5-tetrazine). $\begin{array}{l}N:N-\\ \quad\vert__\\ CH:NN:CH\\ \quad\vert_____\vert\end{array}$; m.w. 82.05; red.; m.p. 99; s.w.

s-tetrazinedione, tetrahydro-. See pyrazine.

2, 1, 3, 5-tetrazole (1, 2, 3, 5-tetrazole). $\begin{array}{l}NHN:\\ \quad\vert_\\ :NCH:N\end{array}$; m.w. 70.05; leaf. f.al.; m.p. 155; s.w.; s.al.

tetrolic acid (2-butynoic acid; methylpropiolic acid). $CH_3C{:}CCOOH$; m.w. 84.03; col. tab. f. et. or CS_2; m.p. 76.5; b.p. 203; s.w.; s.al

tetronal (3, 3-bisethylsulfonylpentane; pentane γ, γ-diethyl sulfone). $(C_2H_5)_2C(SO_2C_2H_5)_2$; m.w. 256.28; glit. leaf. f.w.; m.p. 85.

Tetrone. Tetrahydro-para-methylquinoleine.

tetrose. A sugar composed of four carbon atoms.

tetryl (N-methyl-N, 2, 4, 6-tetranitroaniline; methylpicrylnitramine). $(NO_2)_3C_6H_2N(NO_2)CH_3$; m.w. 287.08; yel. monocl. f.al.; m.p. 130; s.w.

textile gum. Water dispersible or soluble material used for thickening or stiffening, e.g. gum tragacanth.

textile sizing. See sizing.

Textolite. A phenol formaldehyde filled resin, thermosetting, available in colored opaque form, of good molding properties and excellent resistance to ketones, esters, hydrocarbons and oils.

texturation. Process of improving whiteness and consistency of lard and similar products by forcing them, in a fluid state, thru a revolving perforated screen.

thalline (1, 2, 3, 4-tetrahydro-6-methoxyquinoline). $C_{10}H_{13}NO$; m.w. 163.11; rhomb.; m.p. 43; b.p. 283.8; s.w.; s.al.

thallium. Tl; at. wt. 204.39; tetr. bl. wh. met.; s.g. 11.85; m.p. 303.5; b.p. 1650; i.w.; a metal occurring in pyrites.

thallium acetate. $TlC_2H_3O_2$; m.w. 263.41; silk. wh. cr., deliq.; s.g. 3.68; m.p. 110; s.w.; s.al.

thallium ammonium chloride. $(NH_4)_2TlCl_6 \cdot 2H_2O$; m.w. 507.28; col.; s.g. 2.39; s.w.

thallium bromate. $TlBrO_3$; m.w. 332.31; col.; s.w.

thallium bromide, di-. $TlBr_2$; m.w. 364.22; yel. need.

thallium bromide, mono-. TlBr; m.w. 284.31; cub. yelsh. wh.; s.g. 7.557 $^{17.5}$; m.p. 460; b.p. 815; s.w.; s.al.

thallium bromide, tri-. $TlBr_3$; m.w 444.14; yel. deliq.; s.w.; s.al.

thallium bromide, tri-. $TlBr_3 \cdot 4H_2O$; m.w. 516.20; lt. yel. need.; s.w.; s.al.

thallium carbonate. Tl_2CO_3; m.w. 468.78; monocl. col.; s.g. 7.11; m.p. 273; s.w.; i.abs.al.

thallium chlorate. $TlClO_3$; m.w. 287.85; s.g. 5.047 ^{9}; s.w.

thallium chlorate, per-. $TlClO_4$; m.w. 303.85; col.; s.g. 4.89; m.p. 501; s.w.; s.al.

thallium chloride, mono-. TlCl; m.w. 239.85; cub. col. or wh. powd.; s.g. 7.00; m.p. 430; b.p. 720 (806); s.w.; i.al.

thallium chloride, sesqui-. Tl_2Cl_3; m.w. 515.15; hex. yel. or yel. powd.; s.g. 5.9; m.p. 400-500; s.w.

thallium chloride, tri-. $TlCl_3$; m.w. 310.76; hex. pl.; m.p. 25; s.w.

thallium chloride, tri-. $TlCl_3 \cdot H_2O$; m.w. 328.78; m.p. $-H_2O$, 60; m.p. d. 100; s.w.

thallium chloride, tri-. $TlCl_3 \cdot 4H_2O$; m.w. 382.82; col. need.; m.p. 37; s.w.; s.al.

thallium chloroplatinate. Tl_2PtCl_6; m.w. 816.75; pa. orange cr.; s.g. 5.76 ^{17}; s.w.

thallium chromate. Tl_2CrO_4; m.w. 524.79; yel.; s.w.

thallium chromate, di-. $Tl_2Cr_2O_7$; m.w. 624.80; red cr.; i.w.

thallium cyanide. TlCN; m.w. 230.40; tabl.; s.w.

thallium ferrocyanide. $Tl_4Fe(CN)_6 \cdot 2H_2O$; m.w. 1065.48; tricl. yel.; s.g. 4.641; s.w.

thallium fluoride, mono-. TlF; m.w. 223.39; cub. oct. pl.; b.p. 300; s.w.; s.al.

thallium fluoride, tri-. TlF_3; m.w. 261.39; olive grn.; i.w.

thallium fluosilicate. $Tl_2SiF_6 \cdot 2H_2O$; m.w. 586.87; hex. pl.; s.w.

thallium hydroxide(ic). $TlO \cdot OH$; m.w. 237.40; yel. cr. or red br. amor.; m.p. $-H_2O$ 115; i.w.; s.al.

thallium hydroxide(ic). $Tl(OH)_3$; m.w. 255.41; hex. br.; m.p. >340; i.w.

thallium hydroxide(ous). TlOH; m.w. 221.40; pa. yel. need.; b.p. d. 139; s.w.; s.al.

thallium iodide, mono-. TlI; m.w. 331.31; cub. red.; rhomb. yel.; s.g. 7.09; m.p. 440; b.p. 824; s.w.; s.al.

thallium iodide, sesqui-. Tl_2I_3; m.w. 789.54; blk. need.; i.w.; s.al.

thallium iodide, tri-. TlI_3; m.w. 585.15; br. need.; s.al.

thallium nitrate(ic). $Tl(NO_3)_3$; m.w. 390.41; cryst.; s.w.

thallium nitrate(ic). $Tl(NO_3)_3 \cdot 3H_2O$; m.w. 444.46; rhomb. col., deliq.; m.p. d. 100.

thallium nitrate(ous) (α). $TlNO_3$; m.w. 266.40; cubic; m.p. 206; b.p. 430; s.w.; i.al.

thallium nitrate(ous) (β). $TlNO_3$; m.w. 266.40; trig.; m.p. tr. α 145.

thallium nitrate(ous) (γ). $TlNO_3$; m.w. 266.40; rhomb.; s.g. 5.556 $^{21.4}$; m.p. tr., 75-β; s.w.; i.al.

thallium nitride. TlN_3; m.w. 246.41; yel.; m.p. 334; s.w.

thallium oxide(ic). Tl_2O_3; m.w. 456.78; hex. blk., amor. br.; s.g. amor. 9.65 ^{21}; hex. 10.19 ^{22}; m.p. 717±5; b.p. −2O, 875; i.w.

thallium oxide(ous). Tl_2O; m.w. 424.78; blk., deliq.; m.p. 300; b.p. −O, 1865; s.w. d. to TlOH; s.al.

thallium phosphate, ortho-. Tl_3PO_4; m.w. 708.19; col. need.; s.g. 6.89; s.w.; i.al.

thallium selenate. Tl_2SeO_4; m.w. 551.98; rhomb. need.; s.g. 6.875; m.p. >400; s.w.; i.al.

thallium selenide. Tl_2Se; m.w. 487.98; gray leaf.; m.p. 340; i.w.

thallium sulfate(ic). $Tl_2(SO_4)_3 \cdot 7H_2O$; m.w. 823.07; col. leaf.; m.p. $-6H_2O$, 220.

thallium sulfate(ous). Tl_2SO_4; m.w. 504.84; rhomb. col.; s.g. 6.77; m.p. 632; s.w.

thallium sulfate, acid(ous). $TlHSO_4$; m.w. 301.46; m.p. 120 d.

thallium sulfide(ic). Tl_2S_3; m.w. 504.96; blk. amor.; m.p. 1.2; i.w.

thallium sulfide(ous). Tl_2S; m.w. 440.84; tetr. bl.-blk.; s.g. 8.0; m.p. 448; s.w.

thallium sulfite(ous). Tl_2SO_3; m.w. 488.84; cryst.; s.g. 6.427; s.w.; i.al.

thallium thiocyanate. TlCNS; m.w. 262.46; tetr. col.; s.w.; i.al.

thallous. Referring to a compound containing monovalent thallium, e.g. thallous sulfate, Tl_2SO_4.

thalotide. A photoconductive composition of thallium, sulfur and oxygen.

thaumasite. A mineral, $3CaO \cdot SiO_2 \cdot CO_2 \cdot SO_3 \cdot 15H_2O$; hex.; sp.gr. 1.83-1.877; hardness 3.5.

thebaine (paramorphine). $C_{19}H_{21}NO_3$; m.w. 311.17; glit. pr.f.al.; m.p. 193; s.w.; s.al.

thebaine, hydrochloride. $C_{19}H_{21}NO_3 \cdot HCl \cdot H_2O$; m.w. 365.65; rhomb.; s.w.

thenardite. A mineral, Na_2SO_4; rhomb., wh. to brnsh.; sp.gr. 2.68-2.69; hardness 2-3.

Thenard's blue. See cobalt aluminate.

theine. See caffeine.

a-thenyl alcohol. See 2-thiophenecarbinol.

theobromine (3, 7-dimethylxanthine). $C_7H_8N_4O_2$; m.w. 180.09; wh. rhomb. f.w.; m.p. 337.

theophylline (1, 3-dimethylxanthine). $C_7H_8N_4O_2$; m.w. 180.09; monocl. need. f.w.; m.p. 269-72.

theorem. A speculative truth; in mathematics, a proposition to be proved; in algebra and analysis, a rule, e.g. binomial theorem.

theory. A confirmed explanation of phenomena; a hypothesis tested and confirmed with facts not known at the time the hypothesis was conjectured.

therapeutic index. Ratio between the dose that can be tolerated by a patient in comparison with that required to kill a microorganism.

therm. 100,000 British thermal units (B.T.U.) used as the basis of coal-gas charges. Therms used are equal to the number of cubic feet consumed times the declared calorific value of the gas.

thermal capacity. See water equivalent.

thermal conductivity. See conductivity, thermal.

thermal dissociation. A reversible chemical change brought about by heat.

thermel. Thermoelectric thermometer.

thermion. Ion emitted from a hot body

thermionic emission. Emission of electrons from a heated electrode at temperatures below the boiling point of the metal.

thermionic valve. Device making use of electrons emitted under the influence of heat.

thermionic work function. Effective potential jump thru which an electron passes as it leaves a surface.

Thermit process. An exothermic reaction whereby a metal is freed from its oxide by the reaction of the oxide with a very active metal like aluminum. The name "thermit" is usually applied to a mixture of iron oxide and aluminum, the reaction being started with a burning magnesium ribbon.

thermochemistry. The science that deals with the heat or thermal changes taking place in chemical interactions.

thermocouple. Two dissimilar metals, joined together, which generate an electrical current at the ends when the junction is heated.

thermodynamic potential. See Nernst potential.

thermodynamics. The science that deals with relationship between heat and work.

thermodynamics, first law of. Mechanical and heat energy are quantitatively interconvertible.

thermodynamics, second law of. It is impossible for a self-acting machine, unaided by any external agency, to transfer heat from a body at a low temperature to one at a higher temperature.

thermodynamics, third law of. If the entropy of each element in some crystalline form be taken as zero at the absolute zero, the entropy of any pure crystal is zero, and the entropy of any other substance is greater than zero.

thermoelectric inversion. Decrease of e.m.f. of a thermocouple when temperature increases above a certain point.

thermoelectric power. Quantity measured by the electromotive force produced by a thermocouple for unit difference of temperature between the two junctions.

thermoelectricity. Electromotive force produced in a circuit of two metals held at different temperatures.

thermoelectromotive force. The difference of potential arising from a temperature difference at the junction of two metals.

thermoelement. Thermocouple in conjunction with a heating filament employed in measuring small currents.

thermoflex. Composite sheet of two or more thermostatic metals whose curvature changes when heated uniformly.

thermogenic. Referring to bacteria that generate heat in their metabolism.

thermograph. Device for recording temperatures.

thermolabile. Susceptible to destruction by heat.

thermoluminescence. Luminescence produced by heating a substance below its incandescent point.

thermolysis. Decomposition by heat.

thermonatrite. A mineral, $Na_2CO_3 \cdot H_2O$; rhomb.; sp.gr. 1.5-1.6; hardness 1.0-1.5.

thermophilic. Referring to bacteria that grow best at an elevated temperature (about 55° C.).

thermopile. Arrangement of dissimilar metals placed alternately, which generate an electric current when junctions are heated.

thermoplastic. Property of softening under heat; a thermoplastic substance is adequately rigid at normal temperatures and under normal conditions of stress but is capable of deformation under heat and pressure.

thermoprene. Shellac like products made by milling rubber with organic sulfonic acids.

thermosetting. Property of a substance which undergoes a chemical change when heated whereby a hardened product is formed.

Thermos flask. A double-walled flask, the space between the two walls being evacuated and generally silvered.

thermostat. Any automatic device for regulating temperature.

thetin, dimethyl- (2, 2-dihydro-2, 2-dimethyl-1, 2-oxathietan-4-one). $\begin{array}{l}OS(CH_3)_2CH_2CO\\ \quad\vert_____\vert\end{array}$; m.w. 120.12; deliq. cr.; s.w.; s.al.

thia-. Term applying to a betero sulfur compound, e.g. thiadiazole.

-thial. Suffix denoting a thioaldehyde, e.g. propanethial, CH_3CH_2CHS.

thialdine (5, 6-dihydro-2, 4, 6-trimethyl-1, 3-5-dithiazine). $\begin{array}{l}SCH(CH_3)SCH(CH_3)-\\ \quad\vert____________\vert\\ NHCHCH_3\end{array}$; m.w. 163.23; monocl.; m.p. 43; s.w.; s.al.

thiamin. See vitamin B_1.

thianthrene (dibenso-p-dithiin; diphenylene disulfide). $\begin{array}{l}C_6H_4SC_6H_4S;\\ \quad\vert_____\vert\end{array}$ m.w. 216.18; monocl. pr.f.al.; m.p. 158-60; i.w.

thiazole (thio [b] monazole; metathiazole). $\begin{array}{l}SCH:NCH:CH;\\ \quad\vert_____\vert\end{array}$ m.w. 85.09; col. liq.; b.p. 116.8; s.al.

thiazole, 2-amino- (2-thiazolylamine). $C_3H_2NS \cdot NH_2$; m.w. 100.11; yel. cr. f.al.; m.p. 90; s.w.; s.al.

2-thiazolylamine. See thiazole, 2-amino-.

thickening. See sedimentation.

thief. Device for taking a sample from a tank, pipe-line, etc.

2-thienyl ketone (2, 2'-dithienyl ketone; thienone). $(C_4H_3S)_2CO$; m.w. 194.17; col. need. f.al.; m.p. 87-8; b.p. 326; i.w.; s.al.

thinner. That portion of an enamel or oil paint which is volatile below the temperature at which the binding portion of the medium, such as oil, resin, etc., begins to decompose when the whole is heated.

thioacetal. Acetal (compound resulting from the combination of two alcohol molecules with one of an aldehyde or ketone) in which sulfur atoms replace the oxygens.

thioacetic acid. See acetic acid, thiol-.

thioacid (sulfo-acid). Compounds analogous to the oxy-acids in which the oxygen is replaced by sulfur, containing the group —CO·SH, e.g. ethanethioic acid, either CH_3COSH or CH_3CSOH.

thioalcohol (mercaptan). Alcohol in which a sulfur atom is present in place of the oxygen atom in the —OH group, e.g. C_2H_5—SH.

thioaniline. See aniline, p, p'-thiodi-.

thiocarbamide. See urea, thio-.

thiocarbanilide. See urea, diphenylthio-.

thiocarbonyl chloride. See phosgene, thio-.

thiocarbonyl tetrachloride. See methyl mercaptan, perchloro-.

thiocol. See potassium guaiacol sulfonate.

thiocyanate. A salt of thiocyanic acid, HCNS, e.g. potassium thiocyanate, KCNS; used in textile manufacture, black nickel plating, photography and dyeing.

thiocyanate, ethylene ester. See glycol, dithiocyanate.

thiocyanic acid (sulfocyanic acid). HCNS; m.w. 59.08; col. liq.; m.p. 5; s.al.

thiocyanic acid, allyl ester (2-propenyl thiocyanate; allyl sulfocyanide). $CH_2{:}CHCH_2CNS$; m.w. 99.11; oil.; b.p. 161; s.w.; s.al.

thiocyanic acid, butyl ester (n-butyl sulfocyanate; n-butyl rhodanate). $CH_3(CH_2)_3SCN$; m.w. 115.14; col. liq.; b.p. 184.5-5.5 ^{743}; i.w.; s.al.

thiocyanic acid, tert-butyl ester (tert-butyl sulfocyanate; tert-butyl rhodanate). $(CH_3)_3CSCN$; m.w. 115.14.

thiocyanic acid, cyanogen ester (cyanogen sulfide; cyanogen thiocyanate). N:CSC:N; m.w. 84.08; rhomb. pl. or leaf.; m.p. 65; s.w.; s.al.

thiocyanic acid, ethyl ester. C_2H_5SCN; m.w. 87.11; col. liq.; m.p. −85.5; b.p. 144.4; i.w.; s.al.

thiocyanic acid, isoamyl ester (isoamyl sulfocyanate; isoamyl rhodanate). $(CH_3)_2CH(CH_2)_2SCN$; m.w. 129.15; col. liq.; b.p. 197; s.w.; s.al.

thiocyanic acid, isobutyl ester (isobutyl sulfocyanate; isobutyl rhodanate). $(CH_3)_2CHCH_2SCN$; m.w. 115.14; col. liq.; b.p. 174-6; s.w.

thiocyanic acid, isopropyl ester (isopropyl sulfocyanate; isopropyl rhodanate). $(CH_3)_2CHSCN$; m.w. 101.12; b.p. 149-51; i.w.; s.al.

thiocyanic acid, methyl ester (methyl thiocyanate; methyl sulfocyanate). CH_3SCN; m.w. 73.09; col. liq.; m.p. −51; b.p. 133; s.al.

thiocyanic acid, phenyl ester (phenyl sulfocyanate; phenyl rhodanate). C_6H_5SCN; m.w. 135.11; liq.; b.p. 232; i.w.; s.al.

thiocyanic acid, propyl ester (n-propyl sulfocyanate; n-propyl rhodanate). $CH_3CH_2CH_2SCN$; m.w. 102.12; col. liq.; b.p. 163.

thiocyanogen. $(SCN)_2$; a viscid, unstable, yellow oil obtained when bromine dissolved in carbon disulfide reacts upon a thiocyanate of silver, lead, or mercury, used in volumetric analysis and determination of iodine values.

thiocyanuric acid (trithiocyanuric acid). $C_3H_3N_3S_3$; m.w. 177.23; yel. need.; s.w.; s.al.

thiodiglycol. See ethanol, 2, 2'-thiodi-.

thiodiphenylamine. See phenothiazine.

thioether. Ether in which an atom of sulfur is present instead of the oxygen in the ether linkage, e.g. mustard gas, $(ClCH_2CH_2)_2S$.

thiofuran. See thiophene.

thioglycolic acid. See acetic acid, mercapto-.

thiohydantoin. See hydantoin, 2-thio-.

thioindigo color. Indigoid (q.v.) which contains sulfur atoms in place of the —NH groups of indigo.

thioisatin. See thionaphthenequinone.

thiol-. A suffix denoting a mercaptan (thio-alcohol), e.g. methanethiol, CH_3-SH.

thiolastic. Rubber like substance of polyethylene sulfide class.

thio [b] monazole. See thiazole.

thionaphthene (benzothiophene; benzothiofuran). $C_6H_4SCH{:}CH$; m.w. 134.11; leaf.; m.p. 32; i.w.; s.al.

thionaphthenequinone (1, 2-thionaphthenedione; thioisatin). $C_6H_4{<}_{SCOCO}$; m.w. 164.09; yel. pr.; m.p. 121; b.p. 247; i.w.; s.al.

Thionex. Tetramethyl thiurammonosulfide.

thionine (Lauth's violet). $C_{12}H_9N_3S$; m.w. 227.15; grn. powd. or br. blk. leaf.; s.w.; s.al.

thionyl bromide. See sulfurous oxybromide.

thionyl chloride. See sulfurous oxychloride.

thionyl fluoride. See sulfurous oxyfluoride.

thiophene (thiofuran). $SCH{:}CH{-}CH{:}CH$; m.w. 84.09; liq.; m.p. −40; b.p. 84; i.w.; s.al.

2-thiopheneacetic acid (2-thienylacetic acid). $C_4H_3S{\cdot}CH_2COOH$; m.w. 142.11; col.; m.p. 76; s.w.; s.al.

2-thiopheneacetic acid, α-keto- (2-thienylglyoxylic acid; 2-thienoylformic acid). $C_4H_3SCOCOOH$; m.w. 156.09; cr. $+1H_2O$; m.p. $+1H_2O$ 58-9, anh. 91.5; s.w.

thiophene, N-acetyl-. See acetamide, N-2-thienyl-.

thiophene, 2-acetyl-. See ketone, methyl 2-thienyl.

thiophene, 2-acetyl-5-bromo-. See ketone, 5-bromo-2-thienyl methyl.

thiophene, 2-acetyl-5-chloro-. See ketone, 5-chloro-2-thienyl methyl.

thiophene aldehyde. See thiophenecarbonal.

thiophene, 2-amino-. See thiophenine.

thiophene, 2-bromo-. $SBr{:}CHCH{:}CH$; m.w. 163.00; col.; b.p. 149.5-50.5; i.w.; s.al.

2-thiophenecarbinol (α-thienylcarbinol; α-thienyl alcohol). $C_4H_3S{\cdot}CH_2OH$; m.w. 114.11; col. liq.; b.p. 207; i.w.; s.al.

2-thiophenecarbonal (2-thiophenaldehyde; α-thienylformaldehyde; 2-formylthiophene). $C_4H_3S{\cdot}CHO$; m.w. 112.09; yel. oil.; b.p. 198; i.w.; s.al.

2-thiophenecarbonal, oxime (2-thiophenealdoxime). $C_4H_3S{\cdot}CH{:}NOH$; m.w. 127.11; wh. need.; m.p. 128.

2-thiophenecarbonal, phenylhydrazone (2-thienylformaldehyde phenylhydrazone). $C_4H_3S{\cdot}CHNNHC_6H_5$; m.w. 202.15; yel. need.; m.p. 134.5; i.w.; s.al.

2-thiophenecarboxylic acid (α-thiophenic acid). $C_4H_3S{\cdot}COOH$; m.w. 128.09; need. f.w.; m.p. 126.5; s.w.

3-thiophenecarboxylic acid (β-thiophenic acid). $C_4H_3S{\cdot}COOH$; m.w. 128.09; need. f.w.; m.p. 136.

2-thiophenecarboxylic, 3-methyl-. $CH_3{-}C_4H_2S{\cdot}COOH$; m.w. 142.11; col. need.; m.p. 140; s.w.; s.al.

2-thiophenecarboxylic acid, 5-methyl- (o, o-thiotolenic acid). $CH_3C_4H_2S{\cdot}COOH$; m.w. 142.11; col. need.; s.w.; s.al.

thiophene, 2-chloro-. $SCCl{:}CHCH{:}CH$; m.w. 118.54; col.; b.p. 130.

thiophene, 2, 5-dibromo-. $SCBr{:}CH{-}CH{:}CBr$; m.w. 241.91; col.; b.p. 210.5-1.0; i.w.; s.al.

thiophene, 2, 5-dibromo-3, 4-dinitro-. $(NO_2)_2C_4Br_2S$; m.w. 331.91; pa. yel.; m.p. 139-40; s.al.

2, 3-thiophenedicarboxylic acid. $C_4H_2S{\cdot}(COOH)_2$; m.w. 172.09; need. f.w.; s.w.

2, 4-thiophenedicarboxylic acid. $C_4H_2S{\cdot}(COOH)_2$; m.w. 172.09; cr.; s.w.

2, 5-thiophenedicarboxylic acid. $C_4H_2S(COOH)_2$; m.w. 172.09; wh. cr.; s.w.; s.al.

2, 5-thiophenedicarboxylic acid, diethyl ester. $C_4H_2S(COOC_2H_5)_2$; m.w. 228.15; need. or pr.; m.p. 50; s.al.

thiophene, 2, 5-dichloro-. $SCCl{:}CH{-}CH{:}CCl$; m.w. 152.99; col.; b.p. 170.

thiophene, 2, 3-dihydro-2-imino-. See thiophenine.

thiophene, 2, 5-diiodo-. $SCI{:}CH{-}CH{:}CI$; m.w. 335.92; col. fluores.; m.p. 40.5; i.w.; s.al.

thiophene, 2, 3-dimethyl- (2, 3-thioxene). $(CH_3)_2C_4H_2S$; m.w. 112.12; col. liq.; b.p. 136-7; i.w.; s.al.

thiophene, 2, 4-dimethyl- (2, 4-thioxene). $(CH_3)_2C_4H_2S$; m.w. 112.12; col. liq.; b.p. 138; i.w.; s.al.

thiophene, 2, 5-dimethyl- (2, 5-thioxene). $(CH_3)_2C_4H_2S$; m.w. 112.12; liq.; b.p. 137.5; i.w.; s.al.

thiophene, 2, 5-dinitro-. $(NO_2)_2C_4H_2S$; m.w. 174.09; yel. pl.; m.p. 52; b.p. 290; s.w.; s.al.

thiophene, 2-ethyl-. $C_2H_5C_4H_3S$; m.w. 112.12; col.; b.p. 132-4; i.w.; s.al.

thiophene, 3-ethyl-. $C_2H_5C_4H_3S$; m.w. 112.12; col.; b.p. 135-6; i.w.; s.al.

thiophene, 2-formyl-. See 2-thiophenecarbonal.

thiophene, 2-iodo-. C_4H_3IS; m.w. 210.00; col.; b.p. 182.

thiophene, 2-iodo-5-nitro-. $NO_2C_4H_2IS$; m.w. 255.00; lem. yel., shiny; m.p. 74; s.al.

thiophene, 2-methyl- (α-thiotolene). $CH_3C_4H_3S$; m.w. 98.11; col.; b.p. 113; i.w.; s.al.

thiophene, 3-methyl- (β-thiotolene). $CH_3C_4H_3S$; m.w. 98.11; col. oil.; b.p. 114 ^{738}; i.w.; s.al.

thiophene, 2-methyl-5-phenyl-. $CH_3{\cdot}C_4H_2S{\cdot}C_6H_5$; m.w. 174.14; col. need.; m.p. 49-51; s.al.

thiophene, 2-nitro-. $NO_2C_4H_3S$; m.w. 129.09; monocl. f.al.; m.p. 46.5; b.p. 225; i.w.; s.al.

2-thiophene-ol, 5-methyl- (2, 5-thiotenol). $CH_3C_4H_2S{\cdot}OH$; m.w. 114.11; col. oil; s.w.; s.al.

2-thiophenesulfonamide. $C_4H_3S{\cdot}SO_2{\cdot}NH_2$; m.w. 163.17; wh.; m.p. 141-2; s.w.

3-thiophenesulfonamide. $C_4H_3S{\cdot}SO_2{\cdot}NH_2$; m.w. 163.17; shiny pl.; m.p. 152-3; s.w.

thiophene, tetrabromo-. C_4Br_4S; m.w. 399.72; wh. need.; m.p. 116; b.p. 326; i.w.; s.al.

thiophene, tetrachloro-. C_4Cl_4S; m.w. 221.89; spears.; m.p. 36; s.al.

thiophene, 2, 3, 5-tribromo-. C_4HBr_3S; m.w. 320.82; shiny spears; m.p. 29; b.p. 259-60; i.w.; s.al.

thiophene, 2, 3, 5-tribromo-4-nitro-. $NO_2C_4Br_3S$; m.w. 365.82; red.-yel. need.; m.p. 106.

thiophene, 2, 3, 5-trichloro-. C_4HCl_3S; m.w. 187.44; col. oil.; b.p. 206-7.

thiophene, 2, 3, 5-trichloro-4-nitro-. $NO_2C_4Cl_3S$; m.w. 232.44; red-yel. need.; m.p. 86; s.al.

thiophene, 2, 3, 5-trimethyl-. $(CH_3)_3C_4HS$; m.w. 126.14; col.; b.p. 160-3.

α-thiophenic acid. See 2-thiophenecarboxylic acid.

β-thiophenic acid. See 3-thiophenecarboxylic acid.

thiophenine (2-aminothiophene or 2, 3-dihydro-2-iminothiophene). $C_4H_3S{\cdot}NH_2$ or $C_4H_4S(:NH)$; m.w. 99.11; yel. resin. oil; s.w.; s.al.

thiophenol. See phenol, thio-.

thioplast. Rubber-like materials obtained by interaction of alkali polysulfides with polyhalogenated aliphatic compounds, e.g. Thiokol.

thiopyrine (1, 5-dimethyl-2-phenyl-3-thio-3-pyrazolone). $CH_3NN(C_6H_5){-}CSCH{:}CCH_3$; m.w. 204.17; col. cr. m.p. 166; s.w.; s.al.

thiophenyl, N-methyl-. $CH_3NH{-}C_4H_3S$; m.w. 113.12; col.; b.p. 88-92 ^{15}.

thiorubber. See rubber, thio-.

thiosalicylic acid. See benzoic acid, o-mercapto-.

thiosinamine. See urea, allylthio-.

2, 5-thiotenol. See 2-thiophene-ol, 5-methyl-.

α-thiotolene. See thiophene, 2-methyl-.

β-thiotolene. See thiophene, 3-methyl-.

o, o-thiotolenic acid. See 2-thiophenecarboxylic acid, 5-methyl-.

thioureas. See urea, thio-.

thioxene. See thiophene, dimethyl-.

thiuram disulfide, dicyclopentamethylene-. See sulfide, bis(1-piperidylthiocarbonyl).

thiuram disulfide, dicyclopentamethylene-. See disulfide, bis(1-piperidylthiocarbonyl).

thiuram disulfide, diethyldimethyl-. See disulfide, bis(ethylmethylthiocarbamyl).

thiuram disulfide, tetrabenzyl-. See disulfide, bis(tetrabenzylthiocarbamyl).

thiuram disulfide, tetrabutyl-. See disulfide, bis(dibutylthiocarbamyl).

thiuram disulfide, tetraethyl-. See disulfide, bis(diethylthiocarbamyl).

thiuram disulfide, tetramethyl-. See disulfide, bis(dimethylthiocarbamyl).

thiuram sulfide, tetramethyl-. See sulfide, bis(dimethylthiocarbamyl).

thixotropy. Phenomenon shown by gels, namely, that of becoming liquid on stirring and resolidifying on standing.

Thomas precession. Precession of electron spin axis produced by acceleration imparted to electron by the electric field of its nucleus.

thomsenolite. A mineral, $NaF{\cdot}CaF_2{\cdot}AlF_3{\cdot}H_2O$; monocl.; sp.gr. 2.93-3.0; hardness 2.

Thomson coefficient. Ratio of Thomson e.m.f. in a metal to the corresponding temperature difference.

Thomson effect. See Thomson thermoelectric effect.

Thomson heat. Quantity of heat that must be added or subtracted to neutralize the Thomson effect.

Thomson thermoelectric effect (Thomson effect; Kelvin effect). Designation of the potential gradient along a conductor which accompanies a temperature gradient.

thomsonite. A mineral, $(Na_2Ca)O{\cdot}Al_2O_3{\cdot}2SiO_2{\cdot}3H_2O$; rhomb., wh., redsh. grn. to br.; sp.gr. 2.196-2.4; hardness 5.0-5.5.

thorianite. A radioactive mineral, $(ThU)O_2$(+He, Ce, La, Pb, Fe); cub., blk.; sp.gr. 9.32-9.33; hardness 6.5.

thorite. A radioactive mineral, $ThSiO_4$(+He); tetr., blk. or or. yel. (orangite); sp.gr., blk. 4.5-5.0, yel. 5.2-5.4; hardness 4.5-5.0.

thorium. Th; at. wt. 232.12; cub. gray; s.g. 11.2; m.p. 1845; b.p. >3000; i.w.; a radioactive metal.

thorium acetylacetonate. $Th(CH_3CO{-}CHCOCH_3)_4$; m.w. 628.34; col. cr.; m.p. 171; subl. 160 ^{10}; b.p. 260-270 ^{10}.

thorium boride. ThB_4; m.w. 275.40; pr.; s.g. 7.5 ^{15}; i.w.

thorium boride. ThB_6; m.w. 297.06; amor., violet; s.g. 6.4 ^{15}; i.w.

thorium bromide. $ThBr_4$; m.w. 551.78; col. cr.; s.g. 5.67; b.p. subl. 610; s.w.

thorium carbide. ThC_2; m.w. 256.12; yel. cr.; s.g. 8.96; m.p. ign. 2500; b.p. 5000.

thorium carbonate. $Th(CO_3)_2$; m.w. 352.12; i.w.

thorium chloride. $ThCl_4$; m.w. 373.95; rhomb. wh., deliq.; s.g. 4.59; m.p. 820; subl. 720-50; b.p. d. 1100; s.w.; s.al.

thorium fluoride. $ThF_4 \cdot 4H_2O$; m.w. 380.18; cryst.; m.p. $-H_2O$, 100; b.p. $-2H_2O$, 140-200; i.w.

thorium hydroxide. $Th(OH)_4$; m.w. 300.15; wh. gelat.; i.w.

thorium iodide. ThI_4; m.w. 739.80; s.w.

thorium nitrate. $Th(NO_3)_4$; m.w. 480.15; plates; s.al.

thorium nitrate. $Th(NO_3)_4 \cdot 4H_2O$; m.w. 552.21; col.; s.w.; s.al.

thorium nitrate. $Th(NO_3)_4 \cdot 12H_2O$; m.w. 696.34; white, deliq.; m.p. d. 500; s.w.; s.al.

thorium oxalate. $Th(C_2O_4)_2$; m.w. 408.12; wh. cr.; s.g. 4.637 [16]; i.w.

thorium oxalate. $Th(C_2O_4)_2 \cdot 6H_2O$; m.w. 516.21; wh. amor. powd.; i.w.

thorium oxide, di- (thorianite). ThO_2; m.w. 264.12; cubic, white; s.g. 9.69; m.p. >2800; b.p. 4400; i.w.

thorium oxide, per-. Th_2O_7; m.w. 576.24; i.w.

thorium phosphate, hypo-. $ThP_2O_7 \cdot 11H_2O$; m.w. 588.33; amor. wh. ppt.; i.w.

thorium phosphate, ortho-. $Th_3(PO_4)_4 \cdot 4H_2O$; m.w. 1148.50; gelat. wh.; i.w.

thorium picrate. $Th(C_6H_2N_3O_7)_4 \cdot 10H_2O$; m.w. 1324.43; s.w.

thorium oxysulfide. ThOS; m.w. 280.18; yel. cr.; s.g. 6.44 [6]; i.w.

thorium platinocyanide. $Th[Pt(CN)_4]_2 \cdot 16H_2O$; m.w. 1118.89; rhomb. yel. grn.; s.g. 2.460; s.w.

thorium potassium fluoride. $ThK_2F_6 \cdot H_2O$; m.w. 442.34; col.; i.w.

thorium silicate. $ThO_2 \cdot SiO_2$; m.w. 324.18; col.; s.g. 5.3; s.w.

thorium sulfate. $Th(SO_4)_2$; m.w. 424.24; wh. cryst.; s.g. 4.225 [17]; s.w.

thorium sulfate. $Th(SO_4)_2 \cdot 4H_2O$; m.w. 496.30; need. or wh. cr. powd.; s.w.

thorium sulfate. $Th(SO_4)_2 \cdot 9H_2O$; m.w. 586.38; monocl. wh.; s.g. 2.77; m.p. $-9H_2O$ 400; s.w.

thorium sulfide. ThS_2; m.w. 296.24; yel. br. cryst.; s.g. 6.80; i.w.

thorium vanadate. $ThO_2 \cdot V_2O_5 \cdot 5H_2O$; m.w. 536.10; yel.; i.w.

thorn apple. See stramonium.

thoron. Inert gaseous decomposition product of thorium.

three phase. See phase, three.

three phase current. Three currents differing by ⅓ cycle each entering thru one of three conductors, each wire conducting back the other two currents.

three phase equilibrium. State of equilibrium of vapor, liquid and solid phases of a pure material at a definite pressure and temperature.

threshold frequency. See critical frequency.

thrown silk. Raw silk that has been twisted, or doubled and twisted.

throwing power. Measure of relative ability, of a plating solution, to deposit metal uniformly on an irregular cathode.

thujene. A hydrocarbon, $C_{10}H_{16}$; m.w. 136.12; that can be prepared from sabinol by hydrogenation, and also obtained from thuja oil; b.p. 151-2.

a-thujone (6-ketosabinane [one form]). $C_{10}H_{16}O$; m.w. 152.12; col. liq.; b.p. 200; s.w.; s.al.

thulium. Tm; at. wt. 169.4; i.w.; an element belonging to the erbium family of the rare earths. The free element has not been isolated.

thulium chloride. $TmCl_3 \cdot 7H_2O$; m.w. 401.88; grn. cr.; s.w.; s.al.

thulium oxalate. $Tm_2(C_2O_4)_3 \cdot 6H_2O$; m.w. 710.89; grnsh. wh. ppt.

thulium oxide. Tm_2O_3; m.w. 386.80; grnsh. wh. powd.

thus gum. See frankincense.

thyme oil. See oil, thyme.

thymene. A mixture of various terpenes and cymene found in ajowan oil, used as a soap perfume.

thymine (5-methyluracil). NHCONH-COC(CH$_3$):CH; m.w. 126.06; need. f.al.; s.al.

thymohydroquinone (2, 5-p-cymenediol). $CH_3(C_3H_7)C_6H_2(OH)_2$; m.w. 166.11; pr.; m.p. 143; b.p. 290; s.w.; s.al.

thymol (3-p-cymenol). $CH_3(C_3H_7)C_6H_3OH$; m.w. 150.11; col. hex. pl.; m.p. 51.5; b.p. 233.5; s.al.; used as a drug in cases of hook-worm.

thymol, hexahydro-. See menthol.

thymol, 6-nitroso- (thymoquinone 2-oxime). $C_{10}H_{13}O(\cdot NOH)$; m.w. 180.12; need.; m.p. 160; i.w.; s.al.

thymolphthalein. $OCOC_6H_4C(C_{10}H_{17}O)_2$; m.w. 430.23; col. need.; m.p. 245-6; s.al.

thymoquinone (3, 6-p-menthadiene-2, 5-dione; 2-isopropyl-5-methylhydroquinone). $(CH_3)_2CHC_6H_2(CH_3)O_2$; m.w. 164.09; yel. tricl. tab.; m.p. 45.5; b.p. 232; s.w.; s.al.

thymoquinone, 2-oxime. See thymol, 6-nitroso-.

o-thymotic acid (3-hydroxy-2-p-cymenecarboxylic acid). $CH_3(C_3H_7)C_6H_2(OH)COOH$; m.w. 194.11; monocl. f.w. or bz.; m.p. 127; s.al.

thymylamine (3-p-cymylamine; 2-isopropyl-5-methylaniline). $C_3H_7(CH_3)C_6H_2NH_2$; m.w. 149.13; oil; b.p. 230; s.w.; s.al.

thyratron. Low pressure gas or vapor arc discharge tube using a grid for controlling starting of discharge.

thyroid extract. A yellow amorphous powder obtained from dried and powdered thyroid glands of domesticated animals; used in medicine in the treatment of obesity.

thyronine, tetraiodo-. See thyroxine.

thyroxine. The essential hormone of the thyroid gland, which causes rapid disappearance of stored sugar by increasing the metabolic rate.

d-thyroxine (β-[3, 5-diiodo-4-hydroxyphenoxy-3, 5-diiodophenyl]-d-alanine). $HOC_6H_2I_2OC_6H_2I_2CH_2CH(NH_2)COOH$; m.w. 776.77; need.

l-thyroxine (l-tetraiodothyronine). $C_{15}H_{11}I_4NO_4$; m.w. 776.77; wh. or sl. yel. need.; i.al.

Tidolith. See Cryptone.

tight emulsion. See emulsion, tight.

tiglaldehyde (2-methyl-2-butenal; α, β-dimethylacrolein; guaiole). $CH_3CH:C(CH_3)CHO$; m.w. 84.06; liq.; b.p. 116.5; s.w.; s.al.

tiglic acid (2-methyl-2-butenoic acid [one form]; α, β-dimethyl acrylic acid). $CH_3CH:C(CH_3)COOH$; m.w. 100.06; col. tricl. pr.; m.p. 64; b.p. 198.5; s.w.; s.al.

tilmanite. See mercury selenide (ic).

time constant. Ratio of inductance to resistance of an electrical circuit.

time integral. Definite integral of product of variable (which is a function of time) and the element of time.

time, unit of. The second, equal to 1/86,400 of a mean solar day.

Timonox. Antimony oxide pigment.

tin (brittle) (γ). Sn; at. wt. 118.70; rhomb. wh.; s.g. 6.52-.56; m.p. 231.9 stab. >161; b.p. 2270; i.w.; an allotropic form of tin.

tin (gray) (α). Sn; at. wt. 118.70; cubic, gray; s.g. 5.75; m.p. 231.9 stab. <18; b.p. 2270; i.w.; an allotropic form of tin.

tin (ordinary) (β). Sn; at. wt. 118.70; tetr. wh. met.; s.g. 7.28; m.p. 231.9, stab. 18-170; b.p. 2270; i.w.

tin acetate (ous). $Sn(C_2H_3O_2)_2$; m.w. 236.75; yelsh. powd.; m.p. 182; b.p. 240.

tin acetate, dibenzyl-. $(C_6H_5CH_2)_2Sn(OOCCH_3)_2$; m.w. 418.86; col. need. f.al.; m.p. 136-37.

tin amminochloride, di- (ic). $SnCl_4 \cdot 2NH_3$; m.w. 294.59; cr.; s.w.

tin arsenate (ic). $2SnO_2 \cdot As_2O_5$; m.w. 531.26; wh. gel. ppt.

tin arsenate, pyro- (ous). $2SnO \cdot As_2O_5$ (or $Sn_2As_2O_7$); m.w. 499.26; flocculent ppt.; m.p. d. to $As_2O_5 + SnO_2$; i.w.

tin, benzyltriphenyl-. See tin, triphenylbenzyl-.

tin, block. See block tin.

tin bromide (ic). $SnBr_4$; m.w. 438.26; rhomb. pyramids, col., deliq.; s.g. lq. 3.340 [35]; m.p. 31; b.p. 202 [734]; s.w. d.

tin bromide (ous). $SnBr_2$; m.w. 278.53; rhomb. pa. yel.; s.g. 5.117 [17]; m.p. 215.5; b.p. 620; s.w.

tin bromide, di-, bisacetylacetone. $(C_5H_7O_2)_2SnBr_2$; m.w. 476.64; col. six sided cr.; b.p. 187.

tin bromide, di-, bisbenzoyl acetone. $(C_{10}H_{19}O_2)_2SnBr_2$; m.w. 614.78; pa. yel. powd.; b.p. 213-4.

tin bromide, di-, bisdibenzoylmethane. $(C_{15}H_{11}O_2)_2SnBr_2$; m.w. 722.69; sulfur yel. cr.; b.p. 276-8; i.w.

tin bromide, di-, bis-3-ethylacetylacetone. $(C_7H_{11}O_2)_2SnBr_2$; m.w. 532.70; col. six sided pr.; m.p. 164-6.

tin bromide, di-, dibenzyl-. $(C_6H_5CH_2)_2SnBr_2$; m.w. 460.64; col. need. f.pet.; m.p. 130; s.al.

tin bromide, di-, dibutyl-. $(C_4H_9)_2SnBr_2$; m.w. 392.67; sm. need.; m.p. 20.

tin bromide, di-, diethyl-. $(C_2H_5)_2SnBr_2$; m.w. 336.61; col. need.; s.g. 2.068 [74]; m.p. 63; b.p. 232-3; s.w.

tin bromide, di-, diisoamyl-. $(C_5H_{11})_2SnBr_2$; m.w. 420.70; m.p. −25 to −24.

tin bromide, di-, diisopropyl-. $(C_3H_7)_2SnBr_2$; m.w. 364.64; pale yel. hyg. cr.; m.p. 54.

tin bromide, di-, dimethyl-. $(CH_3)_2SnBr_2$; m.w. 308.58; col. pr.; m.p. 74-6; b.p. 208-13; s.w.

tin bromide, di-, diphenyl-. $(C_6H_5)_2SnBr_2$; m.w. 432.61; col. cr.; m.p. 38; b.p. 230 [42]; s.al.

tin bromide, di-, dipropyl-. $(C_3H_7)_2SnBr_2$; m.w. 364.64; col. need.; m.p. 49; s.w.

tin bromide, diethylisoamyl-. $(C_2H_5)_2(C_5H_{11})SnBr$; m.w. 327.78; s.g. 1.4881 [17]; b.p. 137.5 [17].

tin bromide, diethylisobutyl-. $(C_2H_5)_2(C_4H_9)SnBr$; m.w. 313.76; s.g. 1.5108; b.p. 122 [17].

tin bromide, diethyl-n-propyl-. $(C_2H_5)_2(C_3H_7)SnBr$; m.w. 299.75; s.g. 1.5910 [21]; b.p. 112.2 [16].

tin bromide, diisoamylethyl-. See tin bromide, ethyldiisoamyl-.

tin bromide, diisobutylethyl-. See tin bromide, ethyldiisobutyl-.

tin bromide, ethyldiisoamyl-. $(C_2H_5)(C_5H_{11})_2SnBr$; m.w. 369.83; s.g. 1.3650; b.p. 154-5 [16].

tin bromide, ethyldiisobutyl-. $(C_2H_5)(C_4H_9)_2SnBr$; m.w. 341.80; s.g. 1.4089 [19.5]; b.p. 130.6 [13].

tin bromide, stanni-, bisacetylacetone tetraaqua. See tin stannibromide, bisacetylacetone tetraaqua.

tin bromide, tri-, ethyl-. $C_2H_5SnBr_3$; m.w. 387.49; col. feath. cr.; m.p. 310; s.w.; s.al.

tin bromide, triethyl-. $(C_2H_5)_3SnBr$; m.w. 285.73; col. liq.; s.g. 1.630; m.p. −13.5; b.p. 223-4; s.w.

tin bromide, triisoamyl-. $(C_5H_{11})_3SnBr$; m.w. 411.87; s.g. 1.2613 [20.7]; m.p. 21; b.p. 177 [15].

tin bromide, triisobutyl-. $(C_4H_9)_3SnBr$; m.w. 369.83; s.g. 1.3523; m.p. −26.5; b.p. 148 [13].

tin bromide, tri-, isopropyl-. $C_3H_7SnBr_3$; m.w. 401.50; pa. yel. deliq., pr.; m.p. 112.

tin bromide, triisopropyl-. $(C_3H_7)_3SnBr$; m.w. 327.78; s.g. 1.4623 [26.2]; m.p. −49; b.p. 133 [13].

tin bromide, tri-, methyl-. CH_3SnBr_3; m.w. 373.47; wh. need.; m.p. 53-5; b.p. 210-11 [24]; s.w.; s.al.

tin bromide, trimethyl-. $(CH_3)_3SnBr$; m.w. 243.69; col. cr. or liq.; m.p. 27; b.p. 165; s.w.

tin bromide, tri-, phenyl-. $C_6H_5SnBr_3$; m.w. 435.49; b.p. 182-3 [29]

tin bromide, triphenyl-. $(C_6H_5)_3SnBr$; m.w. 429.73; col. cr.; m.p. 120.5; b.p. 249 [12.5]; i.w.; s.al.

tin bromide, tri-o-tolyl-. $(C_6H_4CH_3)_3SnBr$; m.w. 471.78; rhomb. tabl. f.al.; m.p. 99.5; s.al.

tin bromide, tri-p-tolyl-. $(C_6H_4CH_3)_3SnBr$; m.w. 471.78; rhbdr. f.al.; m.p. 98.5; s.al.

tin bromide, tri-p-xylyl-. $[(CH_3)_2C_6H_3]_3SnBr$; m.w. 513.83; elongated 6-cornered cr.f.al.; m.p. 151; i.al.

tin bromochloride, tri-(ic). $SnBr_3Cl$; m.w. 393.91; liq.; s.g. 3.12 [12]; m.p. 1; b.p. 73 [20].

tin bromodichloride, di-(ic). $SnBr_2Cl_2$; m.w. 349.45; s.g. 2.82 [12]; m.p. −20; b.p. 65 [3]; d. 191.

tin bromodiiodide, di-(ic). $SnBr_2I_2$; m.w. 532.37; or.-red. hex. pl.; s.g. 3.631 [15]; m.p. d. 50; s.y.

tin bromotrichloride(ic). $SnBrCl_3$; m.w. 304.99; col. liq.; s.g. 2.51 [13]; m.p. −1; b.p. 50 [20].

tin chloride(ic). $SnCl_4$; m.w. 260.53; col. liq. <33° C.; s.g. 2.232; m.p. −33; b.p. 114.1; s.w.

tin chloride(ic). $SnCl_4 \cdot 3H_2O$; m.w. 314.57; monocl. pr.; b.p. stab. 64-83; s.w.

tin chloride(ic). $SnCl_4 \cdot 4H_2O$; m.w. 332.59; opaque; b.p. stab. 56-63; s.w.

tin chloride(ic). $SnCl_4 \cdot 5H_2O$; m.w. 350.61; monocl. cr.; b.p. stab. 19-56; s.w.

tin chloride(ous). $SnCl_2$; m.w. 189.61; rhomb. wh.; s.g. lq. 3.393 [245]; m.p. 246.0; b.p. 623; s.w.; s.al.

tin chloride(ous). $SnCl_2 \cdot 2H_2O$; m.w. 225.65; wh. monocl.; s.g. 2.710 [15.4]; m.p. 37.7; s.w.; s.al.

tin chloride, di-, benzylphenyl-. See tin chloride, di-, phenylbenzyl-.

tin chloride, di-, bisacetylacetone. $(C_5H_7O_2)_2SnCl_2$; m.w. 387.72; col. six sided cr.; b.p. 202-3; s.w.

tin chloride, di-, dibenzyl-. $(C_6H_5CH_2)_2SnCl_2$; m.w. col. need. f. acet. —HCl; m.p. 163-4; s.al.

tin chloride, di-, dibutyl-. $(C_4H_9)_2SnCl_2$; m.w. 303.75; need.; m.p. 43.

tin chloride, di-, diethyl-. $(C_2H_5)_2SnCl_2$; m.w. 247.69; wh. need.; m.p. 84-5; b.p. 220; s.w.

tin chloride, di-, diisoamyl-. $(C_5H_{11})_2SnCl_2$; m.w. 331.79; m.p. 28.

tin chloride, di-, diisopropyl-. $(C_3H_7)_2SnCl_2$; m.w. 275.72; col. transp. cr.; m.p. 80-4; s.w.; s.al.

tin chloride, di-, dimethyl-. $(CH_3)_2SnCl_2$; m.w. 219.66; m.p. 90 (107); b.p. 188-90; s.w.

tin chloride, di-, diphenyl-. $(C_6H_5)_2SnCl_2$; m.w. 343.69; col. cr.; m.p. 42; b.p. 333-7 d.; s.w. d.; s.al.

tin chloride, di-, dipropyl-. $(C_3H_7)_2SnCl_2$; m.w. 275.72; col. cr.; m.p. 81; s.w.

tin chloride, diethylisoamyl-. $(C_2H_5)_2(C_5H_{11})SnCl$; m.w. 283.32; s.g. 1.2994 [19.9]; b.p. 125.5 [13].

tin chloride, diethyl-n-propyl-. $(C_2H_5)_2(C_3H_7)SnCl$; m.w. 255.29; s.g. 1.3848 [15.7]; b.p. 108 [17]

tin chloride, di-, ethylpropyl-. $(C_2H_5)(C_3H_7)SnCl_2$; m.w. 261.71; need. f. lt. pet.; m.p. 57-8; s.w.; s.al.

tin chloride, di-, phenylbenzyl-. $(C_6H_5)(C_6H_5CH_2)SnCl_2$; m.w. 357.71; col. need. f.dil. .HCl; m.p. 83-4; b.p. 80-100.

tin chloride, tribenzyl-. $(C_6H_5CH_2)_3SnCl$; m.w. 427.32; wh. need.; m.p. 142-4; i.w.; i.al.

tin chloride, triethyl-. $(C_2H_5)_3SnCl$; m.w. 241.27; col. liq.; s.g. 1.428 [8]; m.p. 10 (15.5); b.p. 208-10; i.w.

tin chloride, triisobutyl-. $(C_4H_9)_3SnCl$; m.w. 325.37; s.g. 1.1290 [34.3]; m.p. +30.2; b.p. 174 [13].

tin chloride, tri-, methyl-. CH_3SnCl_3; m.w. 240.09; col. cr.; m.p. 43; s.w.

tin chloride, trimethyl-. $(CH_3)_3SnCl$; m.w. 199.23; col. cr.; m.p. 37; s.w.

tin chloride, tri-, phenyl-. $C_6H_5SnCl_3$; m.w. 302.11; b.p. 142-3 [23]; s.w.

tin chloride, triisoamyl-. $(C_5H_{11})_3$-

SnCl; m.w. 367.41; s.g. 1.1290 $^{24.2}$; m.p. −30.2; b.p. 114 ^{15}.

tin chloride, triphenyl-. $(C_6H_5)_3SnCl$; m.w. 385.27; col. cr.; m.p. 106; b.p. 240 $^{15.5}$; i.w.

tin chloride, tri-n-propyl-. $(C_3H_7)_3SnCl$; m.w. 283.32; s.g. 1.2678 ^{26}; m.p. −23.5; b.p. 123 ^{15}; col. liq.

tin chloride, tri-o-tolyl-. $(C_6H_4CH_3)_3SnCl$; m.w. 427.32; sh. thick pr.f.al.; m.p. 99.5; s.al.

tin chloride, tri-p-tolyl-. $(C_6H_4CH_3)_3SnCl$; m.w. 427.32; rhomb. pl.f.al.; m.p. 97.5; s.al.

tin chloride, tri-p-xylyl-. $[(CH_3)_2C_6H_3]_3SnCl$; m.w. 469.37; 6-cornered col.f.al.; m.p. 141.5; i.al.

tin chlorodiiodide, di-(ic). $SnCl_2I_2$; m.w. 443.45; red mobile liq.; s.g. 3.287 ^{15}; b.p. 297; s.w.

tin chromate(ic). $Sn(CrO_4)_2$; m.w. 350.72; br.-yel. cr. powd.; s.w.

tin, diethyl-. $(C_2H_5)_2Sn$; m.w. 176.78; sl. yel. oily liq.; s.g. 1.654; m.p. < −12; b.p. 150 d.; i.w.

tin, diethyldiisoamyl-. $(C_2H_5)_2Sn(C_5H_{11})_2$; m.w. 318.96; s.g. 1.0725 ^{15}; b.p. 131 $^{15.5}$.

tin, diethyldiisobutyl-. $(C_2H_5)_2Sn(C_4H_9)_2$; m.w. 290.92; s.g. 1.1030; b.p. 108.2 ^{15}.

tin, diethyldimethyl- (diethyldimethylstannane). $(C_2H_5)_2Sn(CH_3)_2$; m.w. 206.82; col. liq.; m.p. < −13; b.p. 144-6; i.w.; i.al.

tin, diisoamyl ethyl-n-propyl-. See tin, ethyl-n-propyldiisoamyl-.

tin, diisobutyl dimethyl-. See tin, dimethyl diisobutyl-.

tin, dimethyl-. $[(CH_3)_2Sn]_x$; m.w. $(148.75)_x$; yel. solid.; i.w.

tin, dimethyldiisobutyl-. $(CH_3)_2Sn(C_4H_9)_2$; m.w. 262.89; s.g. 1.1179 $^{20.1}$; b.p. 85 $^{15.5}$.

tin, di-β-naphthyl-. $(C_{10}H_7)_2Sn$; m.w. 372.81; m.p. 200; b.p. d. 255.

tin, diphenyl-. $(C_6H_5)_2Sn$; m.w. 272.78; yel. amor. powd.; m.p. 225.7, (126-30); i.w.; i.abs.al.

tin disease. See tin pest.

tin, di-p-tolyl-. $(CH_3C_6H_4)_2Sn$; m.w. 300.81; or.-yel. amor. powd.; m.p. 111.5; b.p. d. <245.

tin, di-p-xylyl-. $[(CH_3)_2C_6H_3]_2Sn$; m.w. 328.84; m.p. 157; b.p. d. 240.

tin ethoxide, triethyl-. $(C_2H_5)_3Sn(OC_2H_5)$; m.w. 250.86; col. liq.; s.g. 1.2634; b.p. 190.

tin, ethyl-n-propyldiisoamyl-. $(C_2H_5)(C_3H_7)(C_5H_{11})_2Sn$; m.w. 332.97; s.g. 1.0654 $^{21.9}$; b.p. 141 ^{17}.

tin, ethyltribenzyl-. See tin, tribenzylethyl-.

tin, ethyltriisobutyl-. See tin, triisobutylethyl-.

tin, ethyltriphenyl-. See tin triphenylethyl-.

tin, ethyltri-n-propyl-. See tin tri-n-propylethyl-.

tin ferricyanide(ous). $Sn_3[Fe(CN)_6]_2$; m.w. 779.88; wh.; i.w.

tin ferrocyanide(ic). $SnFe(CN)_6$; m.w. 320.59; grnsh. wh. gel.; i.w.

tin ferrocyanide(ous). $Sn_2Fe(CN)_6$; m.w. 449.29; wh. gel.; i.w.

tin fluoride(ic). SnF_4; m.w. 194.70; wh. cr. mass, hyg.; s.g. 4:780 ^{19}; b.p. 705; s.w.

tin fluoride(ous). SnF_2; m.w. 156.70; wh. monocl. cr.; s.w.

tin fluoride, di-, diethyl-. $(C_2H_5)_2SnF_2$; m.w. 214.78; sq. pl. or long rhomb. tabl. f. meth. al.; m.p. 229; s.al.

tin fluoride, di-, dimethyl-. $(CH_3)_2SnF_2$; m.w. 186.75; wh. fine plates; b.p. d. <360; s.w.; s.al.

tin fluoride, di-, diphenyl-. $(C_6H_5)_2SnF_2$; m.w. 310.78; m.p. 360.

tin fluoride, di-, dipropyl. $(C_3H_7)_2SnF_2$; m.w. 242.81; leaf.; m.p. 205; s.w.; s.al.

tin fluoride, diethyl-n-propyl-. $(C_2H_5)(C_3H_7)SnF$; m.w. 238.83; m.p. 271; s.al.

tin fluoride, triisoamyl-. $(C_5H_{11})_3SnF$; m.w. 360.96; need.; m.p. 288; s.al.

tin fluoride, triisobutyl-. $(C_4H_9)_3SnF$; m.w. 308.91; fine long pr.; m.p. 244; s.al.

tin fluoride, trimethyl-. $(CH_3)_3SnF$; m.w. 182.77; wh. short thick. rect. pr.; m.p. 360; seal. tube; b.p. d. <375; s.al.

tin fluoride, triphenyl-. $(C_6H_5)_3SnF$; m.w. 368.82; fine pr.; m.p. 357; s.w.; s.al.

tin fluoride, tri-n-propyl-. $(C_3H_7)_3SnF$; m.w. 266.86; flat pr.; m.p. 275; s.al.

tin fluoride, tri-p-tolyl-. $(C_6H_4CH_3)_3SnF$; m.w. 410.86; hairlike felted need.; m.p. 305; s.al.

tin fluoride, tri-m-xylyl-. $[(CH_3)_2C_6H_3]_3SnF$; m.w. 452.91; fine felted need.; m.p. 205; s.al.

tin fluoride, tri-p-xylyl-. $[(CH_3)_2C_6H_3]_3SnF$; m.w. 452.91; fine lng. micro-need.; m.p. 247; s. hot al.

tin fluosilicate(ous). $SnSiF_6$; m.w. 260.76; pr.; s.w.

tin, hexaethyldi-. $[(C_2H_5)_3Sn]_2$; m.w. 411.63; liq.; s.g. 1.412 ^{0}; b.p. d. 270.

tin, hexaphenyldi-. $[(C_6H_5)_3Sn]_2$; m.w. 699.63; m.p. 232.5; b.p. d. <280.

tin, hexa-p-tolyldi-. $[(C_6H_4CH_3)_3Sn]_2$; m.w. 783.73; flat tabl. f.bz.; m.p. 143.5; b.p. d. 335; s.abs.al.

tin, hexa-p-xylyldi-. $[([CH_3]_2C_6H_3)_3Sn]_2$; m.w. 867.82; flat. rhomb. tabl. f.bz.al.; m.p. 192.5; b.p. d. 368.

tin hydride, trimethyl-. $(CH_3)_3SnH$; m.w. 164.78; col. oily liq.; b.p. 60; s.w.

tin hydrophosphate(ous). $SnHPO_4$; m.w. 214.73 cr.; s.g. 3.476 $^{15.5}$; m.p. stab. <100; i.w.

tin hydrophosphate, di-(ous). $Sn(H_2PO_4)_2$; m.w. 312.77; rhomb. cr.; s.g. 3.167 $^{23.5}$.

tin hydroxide(ous). $Sn(OH)_2$; m.w. 152.72; amor. yel.-redsh.-yel. cr.; i.w.

tin hydroxide, tribenzyl-. $(C_6H_5CH_2)_3SnOH$; m.w. 406.87; rhomb., col. tabl.; m.p. 117-21; s. hot al.

tin hydroxide, triethyl-. $(C_2H_5)_3SnOH$; m.w. 222.82; col. cr.; m.p. 43; b.p. 271; s.w.

tin hydroxide, trimethyl-. $(CH_3)_3SnOH$; m.w. 180.78; col. pr.; m.p. 118 d.; b.p. subl. >80; s.w.; s.al.

tin hydroxychloride, diphenyl-. $(C_6H_5)_2Sn(OH)Cl$; m.w. 325.24; amor. wh. powd.; m.p. 187; i.w.

tin hydroxysulfate, di-(ic). $Sn(OH)_2SO_4$; m.w. 248.78; slender wh. need.; s.w. d.

tin iodide(ic). SnI_4; m.w. 626.38; cub. yel.; s.g. 4.696 ^{11}; m.p. 143.5; b.p. 341; subl. 180; s.al.

tin iodide(ous). SnI_2; m.w. 372.54; monocl. yel.-red; s.g. 5.28 ^{25}; m.p. 320; b.p. 720; s.w.

tin iodide, di-, dibenzyl-. $(C_6H_5CH_2)_2SnI_2$; m.w. 554.65; col. lng. silky yel. need. f.eth. petr.; m.p. 86-7; s.al.

tin iodide, di-, diethyl-. $(C_2H_5)_2SnI_2$; m.w. 430.62; wh. need.; m.p. 44.5-45.0; b.p. 240-5 d.; s.w.

tin iodide, di-, dimethyl-. $(CH_3)_2SnI_2$; m.w. 402.59; rhomb. wh.; sp.gr. 2.872; m.p. 43 (30); b.p. 228; s.w.

tin iodide, di-, diphenyl-. $(C_6H_5)_2SnI_2$; m.w. 526.62; col. cr.; m.p. 71-2; b.p. 176-82 ^{1}; i.w.

tin iodide, di-, dipropyl-. $(C_3H_7)_2SnI_2$; m.w. 458.65; col. oily liq.; m.p. < −15; b.p. 270-3; i.w.

tin iodide, tribenzyl-. $(C_6H_5CH_2)_3ISn$; m.w. 518.78; need. like pr.f.glac. ac.a.; m.p. 102-3.

tin iodide, triethyl-. $(C_2H_5)_3SnI$; m.w. 332.74; col. liq.; s.g. 1.833; m.p. −34.5; b.p. 225 (231); s.w.

tin iodide, triisoamyl-. $(C_5H_{11})_3SnI$; m.w. 458.88; s.g. 1.3777 $^{20.5}$; m.p. −22; b.p. 182 ^{12}.

tin iodide, triisobutyl-. $(C_4H_9)_3SnI$; m.w. 416.83; col. liq.; s.g. 1.378 $^{20.5}$; m.p. −22; b.p. 284-6.

tin iodide, triisopropyl-. $(C_3H_7)_3SnI$; m.w. 374.78; s.g. 1.4378 $^{23.5}$; b.p. 151 ^{13}.

tin iodide, tri-, methyl-. CH_3SnI_3; m.w. 514.48; lt. yel. need.; m.p. 86.5; s.w.; s.al.

tin iodide, trimethyl-. $(CH_3)_3SnI$; m.w. 290.69; col. liq.; s.g. 2.1432; m.p. 3.4; b.p. 170; s.w.; s.al.

tin iodide, triphenyl-. $(C_6H_5)_3SnI$; m.w. 474.74; 4-sided monocl. wh.; m.p. 121; b.p. 253 $^{15.5}$; i.w.

tin iodide, tri-n-propyl-. $(C_3H_7)_3SnI$; m.w. 374.78; col. liq.; s.g. 1.692 ^{16}; m.p. −53; b.p. 260-2, 141 ^{15}.

tin iodide, tri-o-tolyl-. $(C_6H_4CH_3)_3SnI$; m.w. 518.78; rhomb. cr. al. eth.; m.p. 119.5; s.al.

tin iodide, tri-p-tolyl-. $(C_6H_4CH_3)_3SnI$; m.w. 518.78; rhomb. pl.f.eth.-al.; m.p. 120-5; s.al.

tin iodide, tri-p-xylyl-. $[(CH_3)_2C_6H_3]_3SnI$; m.w. 560.88; 6-cornered tabl. f.al.; m.p. 159.5; i.al.

tin, isoamyltriethyl-. See tin, triethylisoamyl-.

tin, isoamyl triisobutyl-. See tin, triisobutyl isoamyl-.

tin, isoamyl tri-n-propyl-. See tin, tri-n-propylisoamyl-.

tin, isobutyltriethyl-. See tin, triethylisobutyl.

tin, methyltriethyl-. See tin, triethylmethyl-.

tin, methyltriphenyl-. See tin, triphenylmethyl-.

tin, α-naphthyl triphenyl-. See tin, triphenyl-α-naphthyl-.

tin nitrate(ic). $Sn(NO_3)_4$; m.w. 366.73; silky need.; m.p. d. compl. 50.

tin nitrate(ous). $Sn(NO_3)_2 \cdot 2OH_2O$; m.w. 603.03; col. leaf.; m.p. −20.

tin nitroxychloride, di-(ic). $3SnCl_4 \cdot 4NOCl$; m.w. 1043.44; yel. cr.; s.g. 2.60; m.p. 180.

tin oxalate(ous). SnC_2O_4; m.w. 206.70; wh. cr. or heavy wh. powd.; s.g. 3.56 ^{15}.

tin oxide(ic) (cassiterite). SnO_2; m.w. 150.70; tetr. wh.; s.g. 6.95; m.p. 1127 d.; i.w.

tin oxide(ous). SnO; m.w. 134.70; tetr. (cub.) blk.; s.g. 6.446 ^{0}; m.p. d. 700-950; i.w.

tin oxide, diethyl-. $(C_2H_5)_2SnO$; m.w. 192.78; wh. powd.; i.w.

tin oxide, diisopropyl-. $(C_3H_7)_2SnO$; m.w. 220.81; i.w.

tin oxide, dimethyl-. $(CH_3)_2SnO$; m.w. 164.74; wh. powd.; i.w.

tin oxide, diphenyl-. $(C_6H_5)_2SnO$; m.w. 288.78; col. amor. powd.; i.w.

tin oxide, trimethyl-. $[(CH_3)_3Sn]_2O$; m.w. 343.54; wh. amor. powd.; i.w.

tin oxychloride(ic). $SnOCl_2$; m.w. 205.61; wh.; s.g. 1.8; s.w.

tin oxychloride(ous). $SnO \cdot SnCl_2 \cdot 3H_2O$; m.w. 378.36; wh. cr.; s.w.

tin oxydiphosphate(ic). $Sn_2O(PO_4)_2$; m.w. 443.44; oct. cr.; i.w.

tin oxynitrate(ous). $Sn_2O(NO_3)_2$; m.w. 377.42; wh. cr. mass; m.p. d. <100 exp.

tin pest (tin disease). Disintegration of tin to a gray powder at low temperatures.

tin, phenyltribenzyl-. $(C_6H_5)Sn(C_6H_5CH_2)_3$; m.w. 468.90; liq.; b.p. 290 ^{5}; i.al.

tin, phenyltriethyl-. See tin, triethylphenyl-.

tin phosphate(ic). $2SnO_2 \cdot P_2O_5 \cdot 10H_2O$; m.w. 623.60; s.g. anh. 3.98; i.w.

tin phosphate, meta-(ous). $Sn(PO_3)_2$; m.w. 276.74; amor. mass; s.g. 3.380 $^{22.5}$.

tin phosphate, ortho-(ous). $Sn_3(PO_4)_2$; m.w. 546.14; wh. amor. solid; s.g. 3.823 ^{17}; i.w.

tin phosphate, pyro-(ous). $Sn_2P_2O_7$; m.w. 411.44; amor. powd.; s.g. 4.009 $^{16.4}$.

tin phosphide(ic). SnP; m.w. 149.72; silv. wh.; s.g. 6.56; i.w.

tin phosphide. Sn_4P_3; m.w. 567.86; wh. cr.; s.g. 5.181; m.p. d. <480; i.w.

tin phosphide, tri-. SnP_3; m.w. 211.76; cr.; s.g. 4.10 ^{0}; m.p. d. <415 to Sn_4P_3; i.w.

tin phosphoric chloride(ic). $SnCl_4 \cdot PCl_5$; m.w. 468.83; cr.; m.p. subl. 200.

tin phosphorylchloride(ic). $SnCl_4POCl_3$; m.w. 413.92; cr.; m.p. 58; b.p. 180

tin, n-propyl triethyl-. See triethyl-n-propyl-.

tin selenide(ic). $SnSe_2$; m.w. 277.10; cr.; s.g. 5.133; m.p. 650; i.w.

tin selenide(ous). SnSe; m.w. 197.90; steel gray cr.; s.g. 6.179 ^{0}; m.p. 861; i.w.

tin stannibromide, bis acetylacetone tetraaqua-. $(C_5H_7O_2)_2Sn(OH_2)_4SnBr_6$; m.w. 987.07; col. tabl. pr.; m.p. 105-7.

tin sulfate(ic). $Sn(SO_4)_2 \cdot 2H_2O$; m.w. 346.85; hex. pr., deliq.; s.w.

tin sulfate(ous). $SnSO_4$; m.w. 214.76; wh.-yelsh. cr. powd.; m.p. d. <360 to SO_2; s.w.

tin sulfide(ic) (mosaic gold). SnS_2; m.w. 182.82; hex. gold. yel.; s.g. 4.5; i.w.

tin sulfide(ous). SnS; m.w. 150.76; rhomb. gray-blk.; s.g. 5.080 ^{0}; m.p. 882; b.p. 1230; s.w.

tin sulfide, trimethyl-. $[(CH_3)_3Sn]_2S$; m.w. 359.60; lt. yel. oil; s.g. 1.649 ^{25}; m.p. 6; b.p. 233.5; i.w.

tin sulfochloride(ic). $SnCl_4 \cdot 2SCl_4$; m.w. 608.30; yel. cr.; m.p. 37; b.p. d. <40.

tin sulfoiodide(ic). SnS_2I_4; m.w. 690.50; rhomb. redsh.

tin tartrate(ous). $SnC_4H_4O_6$; m.w. 266.73; heavy wh. powd.; s.w.

tin telluride(ic). $SnTe_2$; m.w. 373.70; blk. floc. ppt.; i.w.

tin telluride(ous). SnTe; m.w. 246.20; gray cr.; s.g. 6.48; m.p. 780; i.w.

tin, tetrabenzyl-. $(C_6H_5CH_2)_4Sn$; m.w. 482.92; col. pr. f. lt. pet.; m.p. 42-3; i.w.

tin, tetracyclohexyl-. $(C_6H_{11})_4Sn$; m.w. 451.04; wh. micr. grains; m.p. 263-4; i.w.; s.al.

tin, tetraethyl-. $(C_2H_5)_4Sn$; m.w. 234.86; col. liq.; s.g. 1.187 ^{25}; m.p. −112; b.p. 181; i.w.; s.al.

tin, tetraisoamyl-. $(C_5H_{11})_4Sn$; m.w. 403.04; liq.; s.g. 1.035 $^{15.5}$; b.p. 188 ^{25}.

tin, tetraisobutyl-. $(C_4H_9)_4Sn$; m.w. 346.98; col. liq.; s.g. 1.054 ^{22}; m.p. −13; b.p. 267; 143 $^{15.5}$; i.w.

tin, tetramethyl-. $(CH_3)_4Sn$; m.w. 178.79; col. liq.; s.g. 1.314 ^{0}; b.p. 78; i.w.; s.al.

tin, tetraphenyl-. $(C_6H_5)_4Sn$; m.w. 426.86; tetr. col. f. xylene; s.g. 1.490 ^{0}; m.p. 226; b.p. >420; i.w.; s.al.

tin, tetrapropyl-. $(C_3H_7)_4Sn$; m.w. 290.92; col. liq.; s.g. 1.1065 $^{23.2}$; b.p. 222-5; i.w.

tin, tetra-m-tolyl-. $(C_6H_4CH_3)_4Sn$; m.w. 482.92; col. need.; m.p. 128.5; i.w.; s. hot al.

tin, tetra-o-tolyl-. $(C_6H_4CH_3)_4Sn$; m.w. 482.92; wh. cr. powd.; m.p. 158-9 (215); i.w.; i.al.

tin, tetra-p-tolyl-. $(C_6H_4CH_3)_4Sn$; m.w. 482.92; col. need.; m.p. 230-3; i.w.; s.al.

tin, tetra-m-xylyl-. $[(CH_3)_2C_6H_3]_4Sn$; m.w. 538.98; rhomb. need. f. bz.-al.; m.p. 219.5; b.p. d. 360; s.al.

tin, tetra-p-xylyl-. $[(CH_3)_2C_6H_3]_4Sn$; m.w. 538.98; wh. quad. cr.; m.p. 272-3; b.p. d. 360; i.w.; s.al.

tin, p-tolyltriphenyl-. See tin triphenyl-p-tolyl-.

tin, tribenzylethyl-. $(C_6H_5CH_2)_3(C_2H_5)Sn$; m.w. 420.90; col. tabl. f.al.-lt. pet.; m.p. 31-2; s.al.

tin, triethyl-. $(C_2H_5)_3Sn$; m.w. 205.82; col. liq.; s.g. 1.3774; m.p. < −75; b.p. 161 ^{25}; i.w.; s.al.

tin, triethylisoamyl-. $(C_2H_5)_3Sn(C_5H_{11})$; m.w. 276.90; s.g. 1.1203 $^{20.1}$; b.p. 111 $^{15.5}$.

tin, triethylisobutyl-. $(C_2H_5)_3Sn(C_4H_9)$; m.w. 262.89; s.g. 1.139 $^{20.5}$; b.p. 96.5 ^{17}.

tin, triethylmethyl-. $(CH_3)_3(C_2H_5)Sn$; m.w. 192.81; col. liq.; b.p. 108.2; i.w.

tin, triethylphenyl-. $(C_2H_5)_3(C_6H_5)Sn$; m.w. 282.86; col. liq.; s.g. 1.2639; b.p. 254; i.w.; s.al.

tin, triethyl-n-propyl-. $(C_2H_5)_3Sn(C_3H_7)$; m.w. 248.87; s.g. 1.1680 $^{20.4}$; b.p. 82 ^{12}.

tin, triisobutylethyl-. $(C_4H_9)_3Sn(C_2H_5)$; m.w. 318.95; s.g. 1.0779 ^{21}; b.p. 125 ^{16}.

tin, triisobutylisoamyl-. $(C_4H_9)_3(C_5H_{11})Sn$; m.w. 361.00; s.g. 1.0356 $^{20.5}$; b.p. 152.9 $^{16.5}$.

tin, trimethyl-. $(CH_3)_3Sn$; m.w. 163.77; col. liq.; s.g. 1.570 ^{21}; m.p. 23; b.p. 182; i.w.

tin, triphenyl-. $(C_6H_5)_3Sn$; m.w. 349.82; wh. powd.; m.p. 232.5; b.p. d. 280; i.w.; s.al.

tin, triphenylbenzyl-. $(C_6H_5)_3Sn(C_6H_5CH_2)$; m.w. 440.87; col. pl.f.al.; m.p. 90; b.p. 250 ^{3}; i.w.

tin, triphenylethyl-. $(C_6H_5)_3SnC_2H_5$; m.w. 378.66; wh. pr.f.al.; s.g. 1.2953 ^{4}; m.p. 56.

tin, triphenylmethyl-. $(C_6H_5)_3SnCH_3$; m.w. 364.84; col. tetr. f. eth.; s.g. 1.3113 $^{22.5.5}$; m.p. 60-1.

tin, triphenyl-α-naphthyl-. $(C_6H_5)_3Sn(C_{10}H_7)$; m.w. 476.87; col. pr.; m.p. 125.

tin, triphenyl-p-tolyl-. $(C_6H_5)_3Sn(C_7H_7)$; m.w. 440.87; need. f.eth. m.p. 124.

tin, tri-n-propylethyl-. $(C_3H_7)_3SnC_2H_5$; m.w. 276.90; s.g. 1.1225 $^{21.2}$; b.p. 117.5 $^{23.5}$.

tin, tri-n-propylisoamyl-. $(C_3H_7)_3Sn(C_5H_9)$; m.w. 304.93; s.g. 1.0841 $^{24.1}$; b.p. 128 ^{15}.

tincal. See borax.

tincture. Alcoholic extraction of a drug or an alcoholic solution, e.g. tincture of iodine.

tincture of opium. See laudanum.

tinfoil. An alloy of the representative composition: tin 88, lead 8, copper 4 and antimony 0.5, capable of being rolled into paper-thin sheets.

tinsel. An alloy of the composition: tin 60, and lead 40, used for decoration.

tin stone. See cassiterite.

tint. A full strength color to which white has been added, e.g. a pastel color.

tinting strength. Power of a pigment or color to change the color of another pigment or color.

tintometer. Apparatus for comparison of colors of solutions.

titanic acid. H_2TiO_3; m.w. 97.92; wh. amor. powd.; i.w.; i.al.

titanic iron ore. See ilmenite.

titanite (sphene). A mineral, $CaO \cdot TiO_2 \cdot SiO_2$; monocl., yel., grn., br., redsh., or blk.; sp.gr. 3.40-3.56; hardness 5.0-5.5.

titanium. Ti; at. wt. 47.90; cub. gray; s.g. 4.5 ^{15}; m.p. 1800; b.p. >3000; i.w.; used in steels.

titanium ammonium oxalate. $(NH_4)_2TiO(C_2O_4)_2 \cdot H_2O$; m.w. 293.99; wh. cr. mass; s.w.

titanium bromide, tetra-. $TiBr_4$; m.w. 367.56; or.-yel. deliq.; s.g. 2.6; m.p. 39; b.p. 230; s.abs.al.

titanium chloride, di-. $TiCl_2$; m.w. 118.81; blk., deliq.; s.al.

titanium chloride, tetra-. $TiCl_4$; m.w. 189.73; col.-lt. yel. liq.; s.g. lq. 1.726; m.p. −30; b.p. 136.4; s.w.; s.al.

titanium chloride, tri-. $TiCl_3$; m.w. 154.27; dk. vlt., deliq.; m.p. d. 440; s.w.; s.al.

titanium cyanide. $Ti_3(CN)_4$; m.w. 343.53; cub. red; s.g. 5.28; i.w.

titanium fluoride, tetra-. TiF_4; m.w. 123.90; wh. powd.; s.g. 2.798 $^{20.5}$; b.p. 284; s.al.

titanium fluoride, tri-. TiF_3; m.w. 104.90; purp. red; s.w.

titanium hydroxide, per-. $Ti(OH)_4$; m.w. 149.95; red-yel. amor.; i.w.

titanium iodide, tetra-. TiI_4; m.w. 555.58; cub. red.; m.p. 150; b.p. >360; s.w.

titanium nitrate. $5TiO_2 \cdot N_2O_5 \cdot 6H_2O$; m.w. 615.61; lust. wh. cr. pl.; s.w.

titanium nitride. TiN; m.w. 61.91; bronze red cr.; s.g. 5.29; m.p. 2930; i.w.

titanium oxalate. $Ti_2(C_2O_4)_3 \cdot 10H_2O$; m.w. 539.96; yel. pr.; s.w.; i.al.

titanium oxide, di- (anatase). TiO_2; m.w. 79.90; tetr.; s.g. 3.84; i.w.

titanium oxide, di- (brookite). TiO_2; m.w. 79.90; rhomb.; s.g. 4.17; i.w.

titanium oxide, di- (rutile). TiO_2; m.w. 79.90; tetr. bl.; s.g. 4.26; m.p. 1640 d.; i.w.

titanium oxide, di-. $TiO_2 \cdot 2H_2O$; m.w. 115.93; wh.; s.w.

titanium oxide, per-. TiO_4; m.w. 95.90; yel.

titanium oxide, sesqui-. Ti_2O_3; m.w. 143.80; trig., vlt. blk.; s.g. 4.6; i.w.

titanium potassium fluoride. $TiK_2F_6 \cdot H_2O$; m.w. 258.12; monocl. col.; s.w.

titanium potassium oxalate. $TiO(COO \cdot COOK)_2 \cdot 2H_2O$; m.w. 354.13; grn.-wh. lust. cr.; s.w.; mordant in cotton and leather dyeing.

titanium sulfate. $Ti_2(SO_4)_3$; m.w. 383.98; grn., deliq.; i.w.; i.al.

titanium sulfide. TiS_2; m.w. 112.02; grn.

Titanolith. See Cryptone.

titanous. Referring to compounds where titanium has a valence of three, e.g. titanous chloride, $TiCl_3$.

Titanox A. Titanium dioxide, used as a white pigment used in paints.

Titanox B. A mixture of titanium dioxide, 25% and barium sulfate, 75% used as a white pigment in paints.

Titanox C. A mixture of titanium dioxide 30% and calcium sulfate 70% used as a white pigment.

Titanox L. Lead titanate.

titanyl sulfate. $TiOSO_4$; m.w. 159.26; wh. or sl. yelsh. powd.

titer. Standard of strength of a solution, as determined by titration.

titration. The volumetric determination of the strength of an acid, base, oxidising or reducing agent by delivering from a burette an appropriate counteracting agent of known strength using a suitable indicator where necessary, e.g. the quantitative addition of standardized sodium hydroxide to a hydrochloric acid solution until an end-point, as indicated by litmus indicator, is obtained.

T.N.A. See aniline, 2, 4, 6-trinitro-.

T.N.T. See toluene, 2, 4, 6-trinitro-.

tobacco, Indian. See lobelia.

tobacco, wild. See lobelia.

tobacco wood. See hamamelis.

Tobias' acid. See 2-naphthylamine-1-sulfonic acid.

tocopherol. See vitamin E.

toggle. Double joint with an elbow-like central hinge.

tolan. See acetylene, diphenyl-.

tolerance. Permissable variation from the standard or from specifications, provided to cover unavoidable imperfection of workmanship.

m-tolidine (4, 4′-bi-m-toluidine; 4, 4′-diamino-2, 2′-dimethylbiphenyl). $[NH_2(CH_3)C_6H_3]_2$; m.w. 212.14; pr.f.-h.w.; m.p. 107-8; s.w.; s.al.

o-tolidine (4, 4′-bi-o-toluidine; 4, 4′-diamino-3, 3′-dimethylbiphenyl). $[NH_2(CH_3)C_6H_3]_2$; m.w. 212.14; col. sc.f.h.w.; m.p. 126.5-9; s.w.; s.al.

p-tolidine. $[NH_2(CH_3)C_6H_3]_2$; m.w. 212.14; leaf.; m.p. 103; s.w.; s.al.

o-tolidine fluosilicate. $(CH_3NH_2 \cdot C_6H_3)_2 \cdot H_2SiF_6$; m.w. 356.22; wh. pr.; m.p. 268; s. 95% al.

Tollens' reagent. An ammoniacal silver solution in which the silver is present as the complex, $Ag(NH_3)_2^+$, used in testing for aldehydes and other reducing substances.

m-tolualdehyde (m-methylbenzaldehyde). $CH_3C_6H_4CHO$; m.w. 120.06; liq.; sp.gr. 1.018; b.p. 199; s.w.; s.al.

o-tolualdehyde (2-methylbenzenecarbonal; o-methylbenzaldehyde). $CH_3C_6H_4CHO$; m.w. 120.06; liq.; b.p. 195.5; s.w.; s.al.

p-tolualdehyde (p-methylbenzaldehyde). $CH_3C_6H_4CHO$; m.w. 120.06; liq.; b.p. 204; s.w.; s.al.

α-tolualdehyde (phenylacetaldehyde). $C_6H_5CH_2CHO$; m.w. 120.06; col. liq.; m.p. <−10; b.p. 194; s.w.; s.al.

m-toluamide (m-methylbenzamide). $CH_3C_6H_4CONH_2$; m.w. 135.08; need. f.et.; m.p. 97; s.w.; s.al.

o-toluamide (o-methylbenzamide). $CH_3C_6H_4CONH_2$; m.w. 135.08; col. need. f.w.; m.p. 147; s.w.; s.al.

p-toluamide (p-methylbenzamide). $CH_3C_6H_4CONH_2$; m.w. 135.08; col. need. f.w.; m.p. 165; s.w.; s.al.

α-toluanilide (α-phenylacetanilide). $C_6H_5CH_2CONHC_6H_5$; m.w. 211.11; wh. pr. f.al.; m.p. 117; i.w.

tolubenzyl alcohol. See carbinol, tolyl-.

toluene (methylbenzene; phenylmethane). $C_6H_5CH_3$; m.w. 92.06; col. liq.; m.p. −95; b.p. 110.8; s.al.

toluene, α-amino-. See benzylamine.

toluene, ω-azido-. See toluene, α-triazo-.

toluene, benzyl-. See methane, phenyltolyl-.

toluene, α- (benzyldithio)-. See benzyl disulfide.

toluene, m-bromo- (m-tolyl bromide). $BrC_6H_4CH_3$; m.w. 170.97; col. liq.; m.p. −39.8; b.p. 183.7; i.w.; s.al.

toluene, o-bromo- (o-tolyl bromide). $CH_3C_6H_4Br$; m.w. 170.97; col. liq.; m.p. −27; b.p. 181.75; i.w.; s.al.

toluene, p-bromo- (p-tolyl bromide). $BrC_6H_4CH_3$; m.w. 170.97; rhomb. cr.f.al.; m.p. 28; b.p. 184-5; i.w.; s.al.

toluene, α-bromo-. See benzyl bromide.

toluene, bromo-α-chloro-. See benzyl chloride, bromo-.

toluene, α-bromo-m-nitro- (m-nitrobenzyl bromide). $NO_2C_6H_4CH_2Br$; m.w. 215.97; need.; m.p. 58; s.w.; s.al.

toluene, α-bromo-o-nitro- (o-nitrobenzyl bromide). $NO_2C_6H_4CH_2Br$; m.w. 215.97; cr. f. dil. al.; m.p. 46-7; i.w.; s.al.

toluene, α-bromo-p-nitro- (p-nitrobenzyl bromide). $NO_2C_6H_4CH_2Br$; m.w. 215.97; need. f.al.; m.p. 100; s.al.

toluene, butoxy-. See ether, butyl tolyl.

toluene, m-butyl- (1-butyl-3-methylbenzene). $CH_3C_6H_4C_4H_9$; m.w. 148.12; oil; b.p. 197-8; i.w.; s.al.

toluene, o-butyl- (1-butyl-2-methylbenzene). $CH_3C_6H_4(CH_2)_3CH_3$; m.w. 148.12; oil; b.p. 200-1; i.w.; s.al.

toluene, p-butyl- (1-butyl-4-methylbenzene). $CH_3C_6H_4C_4H_9$; m.w. 148.12; oil; b.p. 198-9; i.w.; s.al.

toluene, 3-tert-butyl-2, 4, 6-trinitro- (artificial musk). $[(CH_3)_3C](CH_3)-C_6H(NO_2)_3$; m.w. 283.13; wh. need. f.al.; m.p. 85; i.w.; s.al.

toluene, m-chloro- (3-chloro-1-methylbenzene). $ClC_6H_4CH_3$; m.w. 126.51; col. liq.; m.p. −47-8; b.p. 162; i.w.; s.al.

toluene, o-chloro- (2-chloro-1-methylbenzene). $ClC_6H_4CH_3$; m.w. 126.51; col. liq.; m.p. −34; b.p. 159; i.w.; s.al.

toluene, p-chloro- (4-chloro-1-methylbenzene). $ClC_6H_4CH_3$; m.w. 126.51; col. liq.; m.p. 7.5; b.p. 162; i.w.; s.al.

toluene, α-chloro-. See benzyl chloride.

toluene, α-chloro-α, α-difluoro- (benzodifluorochloride). $C_6H_5CF_2Cl$; m.w. 162.50; col. liq.; b.p. 142.6 ^{770}; i.w.; s.al.

toluene, chloromercuri-. See mercury chloride, tolyl-.

toluene, α-chloro-m-nitro- (m-nitrobenzyl chloride). $NO_2C_6H_4CH_2Cl$; m.w. 171.51; yel. need. f. lgr.; m.p. 44.5; b.p. 183 ^{30}; i.w.; s.al.

toluene, α-chloro-o-nitro- (o-nitrobenzyl chloride. $NO_2C_6H_4CH_2Cl$; m.w. 171.51; cr. f. lgr.; m.p. 49; i.w.; s.al.

toluene, α-chloro-p-nitro- (p-nitrobenzyl chloride). $NO_2C_6H_4CH_2Cl$; m.w. 171.51; leaf. or need. f.w.; m.p. 71; i.w.

p-toluene, o-chloro-, sodium sulfonate. $C_6H_3CH_3ClSO_3Na$; m.w. 228.58; gr. powd.; base for Lake Red C in printing inks.

toluene, diacetoxy-. See benzal diacetate.

toluenediamine. See tolylenediamine.

α, α-toluenediamine, N, N′-dibenzal-. See hydrobenzamide.

toluene, diamino-. See tolylenediamine.

toluene, α, α-dibromo-. See benzol bromide.

toluene, α, α-dibromo-d-nitro- (p-nitrobenzal bromide). $NO_2C_6H_4CHBr_2$; m.w. 294.88; need. f.al.; m.p. 82.0-2.5; i.w.; s.al.

α, 2-toluenedicarboxylic acid. See homophthalic acid.

toluene, α, α-dichloro-. See benzal chloride.

toluene, α, 4-dichloro-. See benzyl chloride, p-chloro-.

toluene, α, α-dichloro-m-nitro- (m-nitrobenzal chloride). $NO_2C_6H_4CHCl_2$; m.w. 205.96; monocl. cr. f.al.; m.p. 65; i.w.; s.al.

toluene, α, α-dichloro-p-nitro- (p-nitrobenzal chloride). $NO_2C_6H_4CHCl_2$; m.w. 205.96; pr. f.al.; m.p. 46; i.w.; s.al.

toluene, 3, 5-diethyl- (1, 3-diethyl-5-methylbenzene). $(C_2H_5)_2C_6H_3CH_3$; m.w. 148.12; col. liq.; b.p. 200; i.w.; s.al.

toluene, o-diethylamino-. See o-toluidine, N, N-diethyl-.

toluene, p-diethylamino-. See p-toluidine, N, N-diethyl-.

toluene, 1, 2-dihydro-. $C_6H_7CH_3$; m.w. 94.08; liq.; b.p. 110.1; i.w.; s.al.

toluene, 2, 3-dihydroxy-. See pyrocatechol, 3-methyl-.

toluene, 2, 4-dihydroxy-. See cresorcinol.

toluene, 2, 5-dihydroxy-. See toluhydroquinone.

toluene, 2, 6-dihydroxy-. See resorcinol, 2-methyl-.

toluene, 3, 5-dihydroxy-. See orcinol.

α, 2-toluenediol. See saligenin.

α-toluenediol. See benzyl alcohol,-hydroxy-.

toluene, 2, 4-dinitro- (1-methyl-2, 4-dinitrobenzene). $(NO_2)_2C_6H_3CH_3$; m.w. 182.06; yel. need. f.al. or CS_2; m.p. 69.5-70.5.

toluene, 2, 5-dinitro- (2-methyl-1, 4-dinitrobenzene). $(NO_2)_2C_6H_3CH_3$; m.w. 182.06; need. f.al.; m.p. 52.5; s.al.

toluene, 2, 6-dinitro- (2-methyl-1, 3-dinitrobenzene). $(NO_2)_2C_6H_3CH_3$; m.w. 182.06; rhomb. need.; m.p. 66; s.al.

toluene, 3, 4-dinitro- (4-methyl-1, 2-dinitrobenzene). $(NO_2)_2C_6H_3CH_3$; m.w. 182.06; yel. need. f. CS_2; m.p. 59.8; i.w.; s.al.

toluene, 3, 5-dinitro- (1-methyl-3, 5-dinitrobenzene). $(NO_2)_2C_6H_3CH_3$; m.w. 182.06; yel. monocl. need. f.w.; m.p. 93; s.w.; s.al.

toluene, g-, m-, or p-ethoxy-. See ether, ethyl tolyl.

toluene, α-ethoxy-. See ether, benzyl ethyl.

toluene, m-ethyl- (1-ethyl-3-methylbenzene). $CH_3C_6H_4C_2H_5$; m.w. 120.09; col. liq.; b.p. 162.5; i.w.; s.al.

toluene, o-ethyl- (1-ethyl-2-methylbenzene). $CH_3C_6H_4C_2H_5$; m.w. 120.09; col. liq.; m.p. <−17; b.p. 162; i.w.; s.al.

toluene, p-ethyl- (1-ethyl-4-methylbenzene). $CH_3C_6H_4C_2H_5$; m.w. 120.09; col. liq.; m.p. <−20; b.p. 162; i.w.; s.al.

toluene, m-fluoro-. $CH_3C_6H_4F$; m.w. 110.05; col. liq.; m.p. −110.8; b.p. 116; i.w.; s.al.

toluene, o-fluoro-. $CH_3C_6H_4F$; m.w. 110.05; col. liq.; m.p. <−80; b.p. 114; i.w.; s.al.

toluene, p-fluoro-. $CH_3C_6H_4F$; m.w. 110.05; col. liq.; b.p. 117; i.w.; s.al.

toluene, hexahydro-. See cyclohexane, methyl-.

toluene, α-hydroxy-. See benzyl alcohol.

toluene, o-, m-, or p-hydroxy-. See cresol.

toluene, m-iodo-. $CH_3C_6H_4I$; m.w. 217.97; liq.; b.p. 204; i.w.; s.al.

toluene, o-iodo-. $CH_3C_6H_4I$; m.w. 217.97; liq.; b.p. 211; i.w.; s.al.

toluene, p-iodo-. $CH_3C_6H_4I$; m.w. 217.97; leaf.; m.p. 35; b.p. 211.5;

i.w.; s.al.

toluene, α-iodo-. See benzyl iodide.

toluene, isopropyl-. See cymene.

toluene, o-, m-, or p-methoxy-. See ether, methyl tolyl.

toluene, α-methoxy-. See ether, benzyl methyl.

toluene, m-nitro-. $NO_2C_6H_4CH_3$; m.w. 137.06; cr. or liq.; m.p. 15.5; b.p. 231; s.al.

toluene, o-nitro-. $NO_2C_6H_4CH_3$; m.w. 137.06; yel. liq.; m.p. α −10.6, β −4.1; b.p. 222.3; s.al.

toluene, p-nitro-. $NO_2C_6H_4CH_3$; m.w. 137.06; col. rhomb. need.; m.p. 51.3; b.p. 238; s.al.

toluene, m-nitroso-. $NOC_6H_4CH_3$; m.w. 121.06; need.; m.p. 53; i.w.; s.al.

toluene, o-nitroso-. $NOC_6H_4CH_3$; m.w. 121.06; need.; m.p. 72-2.5; s.al.

toluene, p-nitroso-. $NOC_6H_4CH_3$; m.w. 121.06; col. need. f. lgr.; m.p. 48.

toluene, o-, m-, or p-phenyl-. See biphenyl, methyl-.

toluene, α-phenyl-. See methane, diphenyl-.

toluene, 2-propenoxy-. See ether, allyl tolyl.

toluene, propoxy-. See ether, propyl tolyl.

toluene, m-propyl- (1-methyl-3-propylbenzene). $CH_3C_6H_4(CH_2)_2CH_3$; m.w. 134.11; liq.; b.p. 176-7; i.w.; s.al.

toluene, o-propyl- (1-methyl-2-propylbenzene). $CH_3C_6H_4(CH_2)_2CH_3$; m.w. 134.11; liq.; b.p. 181-2; i.w.; s.al.

toluene, p-propyl- (1-methyl-4-propylbenzene). $CH_3C_6H_4(CH_2)_2CH_3$; m.w. 134.11; liq.; b.p. 183-4; i.w.; s.al.

o-toluenesulfonamide. $CH_3C_6H_4SO_2NH_2$; m.w. 171.14; octahdr.; m.p. 153-6.

p-toluenesulfonamide. $CH_3C_6H_4SO_2NH_2$; m.w. 171.14; monocl.; m.p. 137.5.

p-toluenesulfonamide, N, N-dichloro-. See dichloramine (T).

p-toluene sulfonchloride. See p-toluenesulfonyl chloride.

m-toluenesulfonic acid. $CH_3C_6H_4SO_3H$; m.w. 172.12; need.; s.al.

o-toluenesulfonic acid (2-methylbenzenesulfonic acid). $CH_3C_6H_4SO_3H$; m.w. 172.12; deliq. cr.; m.p. 67.5; b.p. 128.8 [15]; s.al.

p-toluenesulfonic acid (4-methylbenzenesulfonic acid). $CH_3C_6H_4SO_3H$; m.w. 172.12; monocl. leaf. or pr.; m.p. 106-7; b.p. 140 [20]; s.al.

p-toluenesulfonic acid, 3-amino- (o-toluidine-5-sulfonic acid). $NH_2C_6H_3(CH_3)(SO_3H)$; m.w. 187.14; need.; i.al.

o-toluenesulfonic acid, 5-amino- (p-toluidine-3-sulfonic acid). $NH_2C_6H_3(CH_3)(SO_3H)$; m.w. 187.14; cr. $+H_2O$; i.al.

p-toluenesulfonyl chloride (p-toluenesulfone chloride). $CH_3C_6H_4SO_2Cl$; m.w. 190.57; col. tricl. or rhomb.; m.p. 69; b.p. 146 [15]; i.w.; s.al.

toluene, 1, 2, 3, 6-tetrahydro-. See cyclohexene, 4-methyl-.

o-, m-, or p-toluenethiol. See cresol, thio-.

α-toluenethiol (benzyl mercaptan; thiobenzyl alcohol; benzyl hydrosulfide). $C_6H_5CH_2SH$; m.w. 124.12; liq.; b.p. 194-5; i.w.; s.al.

toluene, α-triazo- (benzyl azide; ω-azoditoluene). $C_6H_5CH_2N_3$; m.w. 133.08; oil.; b.p. 108 [23]; i.w.; s.al.

toluene, α-trichloro- (benzotrichloride; phenylchloroform). $C_6H_5CCl_3$; m.w. 195.41; col. oil; m.p. −22; b.p. 214; i.w.; s.al.

toluene, α-trifluoro- (benzotrifluoride). $C_6H_5CF_3$; m.w. 146.04; b.p. 102.4; i.w.; s.al.

toluene, 3, 4, 5-trihydroxy-. See pyrogallol, 5-methyl-.

toluene, 2, 3, 4-trinitro-. $(NO_2)_3C_6H_2CH_3$; m.w. 227.06; tricl. leaf. f. al.; m.p. 112; i.w.; s.al.

toluene, 2, 4, 5-trinitro- (γ-trinitrotoluene). $(NO_2)_3C_6H_2CH_3$; m.w. 227.06; yel. rhomb. pl.f.acet.; m.p. 104; i.w.; s.al.

toluene, 2, 4, 6-trinitro- (sym-trinitrotoluene; α-trinitrotoluene; T.N.T.). $(NO_2)_3C_6H_2CH_3$; m.w. 227.06; col. monocl. (rhomb.) f.al.; m.p. 80.7; s.al.

toluhydroquinone (2-methyl-1, 4-benzenediol; 2-methylhydroquinone; homoquinone; 2, 5-dihydroxytoluene; hydrotoluquinone). $CH_3C_6H_3(OH)_2$; m.w. 124.06; col. rhomb. leaf. f.bs.; m.p. 124-5; s.w.; s.al.

α-toluic acid (phenylacetic acid). $C_6H_5CH_2COOH$; m.w. 136.06; col. leaf.; m.p. 76.7; b.p. 265.5; s.al.

m-toluic acid (m-methylbenzoic acid). $CH_3C_6H_4COOH$; m.w. 136.06; col. pr.f.w.; m.p. 108.75; b.p. 263; s.al.

o-toluic acid (o-methylbenzoic acid). $CH_3C_6H_4COOH$; m.w. 136.06; col. need.; m.p. 103.7; b.p. 259.2; s.al.; s.w.

p-toluic acid (p-methylbenzoic acid). $CH_3C_6H_4COOH$; m.w. 136.06; col. need. f.w.; m.p. 179.6; b.p. 275; s.al.

α-toluic acid, α-amino-(dl) (dl-α-amino-α-phenylacetic acid). $C_6H_5CH(NH_2)COOH$; m.w. 151.08; pr.f.w. + al.; i.w.; s.al.

α-toluic acid, p-amino- (p-aminophenylacetic acid). $NH_2C_6H_4CH_2COOH$; m.w. 151.08; leaf.; s.w.; s.al.

α-toluic acid, o-amino-, lactam. See oxindole.

α-toluic acid, 2, 4-dinitro- (2, 4-dinitrophenylacetic acid; 2, 4-dinitrobenzeneethanoic acid). $(NO_2)_2C_6H_3CH_2COOH$; m.w. 226.06; col. need. f.w.; s.w.; s.al.

o-toluic acid, 4, 6-dihydroxy-. See o-orsellinic acid.

α-toluic acid, ethyl ester (ethyl phenylacetate). $C_6H_5CH_2COOC_2H_5$; m.w. 164.09; col. liq.; b.p. 226; i.w.; s.al.

m-toluic acid, ethyl ester. $CH_3C_6H_4COOC_2H_5$; m.w. 164.09; col. liq.; b.p. 226.4; i.w.; s.al.

o-toluic acid, ethyl ester. $CH_3C_6H_4COOC_2H_5$; m.w. 164.09; col. liq.; m.p. < −10; b.p. 221.3; i.w.; s.al.

p-toluic acid, ethyl ester. $CH_3C_6H_4COOC_2H_5$; m.w. 164.09; col. liq.; b.p. 228; i.w.; s.al.

α-toluic acid, α-hydroxy-. See mandelic acid.

α-toluic acid, m-hydroxy-. $HOC_6H_4CH_2COOH$; m.w. 152.06; need. f.bz. + lgr.; m.p. 129; b.p. 190 [11]; s.w.; s.al.

α-toluic acid, o-hydroxy- (o-hydroxyphenylacetic acid). $HOC_6H_4CH_2COOH$; m.w. 152.06; need. f. et.; m.p. 137; s.w.

α-toluic acid, p-hydroxy-. $HOC_6H_4CH_2COOH$; m.w. 152.06; pr. or need. f.w.; m.p. 148; s.w.; s.al.

m-toluic acid, 2-hydroxy-. See 2, 3-cresotic acid.

m-toluic acid, 4-hydroxy-. See 4, 3-cresotic acid.

m-toluic acid, 5-hydroxy-. See 3, 5-cresotic acid.

m-toluic acid, 6-hydroxy-. See 4, 5-cresotic acid.

o-toluic acid, α-hydroxy- (o-[hydroxymethyl]-benzoic acid). $HOCH_2C_6H_4COOH$; m.w. 152.06; need.; m.p. 120; s.al.

o-toluic acid, α-hydroxy-, lactone. See phthalide.

o-toluic acid, 3-hydroxy-. See 3, 2-cresotic acid.

o-toluic acid, 4-hydroxy-. See 4, 2-cresotic acid.

o-toluic acid, 5-hydroxy-. See 3, 6-cresotic acid.

o-toluic acid, 6-hydroxy-. See 2, 6-cresotic acid.

p-toluic acid, 2-hydroxy-. See 2, 4-cresotic acid.

p-toluic acid, 3-hydroxy-. See 3, 4-cresotic acid.

α-toluic acid, isobutyl ester (eglantine). $C_6H_5CH_2COOC_4H_9$; m.w. 192.12; b.p. 254; i.w.; s.al.

α-toluic acid, m-methyl- (m-tolylacetic acid). $CH_3C_6H_4CH_2COOH$; m.w. 150.08; need.; m.p. 61; s.w.

α-toluic acid, o-methyl- (o-tolylacetic acid). $CH_3C_6H_4CH_2COOH$; m.w. 150.08; col. need. f.w.; m.p. 88-9; s.w.

α-toluic acid, α-methyl-. See hydratropic acid.

α-toluic acid, α-methylene-. See atropic acid.

α-toluic acid, methyl ester (methyl phenylacetate). $C_6H_5CH_2COOCH_3$; m.w. 150.08; col. liq.; b.p. 220; i.w.; s.al.

o-toluic acid, methyl ester. $CH_3C_6H_4COOCH_3$; m.w. 150.08; liq.; m.p. < −50; b.p. 213; i.w.; s.al.

p-toluic acid, methyl ester. $CH_3C_6H_4COOCH_3$; m.w. 150.08; cr. f.pet. eth.; m.p. 33; b.p. 217; i.w.; s.al.

α-toluic acid, p-nitro-. $NO_2C_6H_4CH_2COOH$; m.w. 181.06; col. need. f.w.; m.p. 152-3; s.w.; s.al.

m-toluic acid, p-phenylphenacyl ester. $CH_3C_6H_4COOCH_2COC_6H_4C_6H_5$; m.w. 330.14; m.p. 136.5.

o-toluic acid, p-phenylphenacyl ester. $CH_3C_6H_4COOCH_2COC_6H_4C_6H_5$; m.w. 330.14; m.p. 94.5.

p-toluic acid, p-phenylphenacyl ester. $CH_3C_6H_4COOCH_2COC_6H_4C_6H_5$; m.w. 330.14; m.p. 165.

α-toluic acid, piperazinium salt. $C_4H_{10}N_2 \cdot 2C_8H_8O_2$; m.w. 258.22; wh. need.; m.p. 146.5-7.5; s.w.; s.al.

o-toluic anhydride. $(CH_3C_6H_4CO)_2O$; m.w. 254.11; col. f. et.; m.p. 39; b.p. 325.

toluide. An N-acyl derivative of toluidine, e.g. R—C(=O)—N(H)—C_6H_4—CH_3.

m-toluidine (m-methylaniline). $CH_3C_6H_4NH_2$; m.w. 107.08; liq.; m.p. −31.5; b.p. 203.3; s.w.; s.al.

o-toluidine (o-methylaniline). $CH_3C_6H_4NH_2$; m.w. 107.08; col. liq.; m.p. α-24.4, β-16.3; b.p. 199.84; s.al.

p-toluidine (p-methylaniline). $CH_3C_6H_4NH_2$; m.w. 107.08; leaf. f.w.; m.p. 45; b.p. 200.3; s.al.

toluidines, mixed. O-, m-, and p-aminotoluenes, prepared by reduction of nitrotoluenes and used in the manufacture of dyes.

m-toluidine, N-acetyl-. See m-acetotoluide.

o-toluidine, N-acetyl-. See o-acteotoluide.

p-toluidine, N-acetyl-. See p-acetotoluide.

m-toluidine, N-benzoyl-. See m-benzotoluide.

o-toluidine, N-benzoyl-. See o-benzotoluide.

p-toluidine, N-benzoyl-. See benzotoluide.

p-toluidine, 2-bromo- (2-bromo-4-methylaniline). $Br(CH_3)C_6H_3NH_2$; m.w. 185.99; leaf.; m.p. 26; b.p. 240; i.w.; s.al.

p-toluidine, 2-bromo-5-nitro- (2-bromo-4-methyl-5-nitroaniline). $CH_3(NO_2)BrC_6H_2NH_2$; m.w. 230.99; yel. need. f.al.

o-toluidine, N, N-diethyl- (1-diethylamino-2-methylbenzene). $CH_3C_6H_4N(C_2H_5)_2$; m.w. 163.14; pr.f.w.; m.p. 72.3; b.p. 209-10; s.w.; s.al.

p-toluidine, N, N-diethyl- (1-diethylamino-4-methylbenzene). $CH_3C_6H_4N(C_2H_5)_2$; m.w. 163.14; col. liq.; m.p. 229; s.w.; s.al.

m-toluidine, N, N-dimethyl-. $CH_3C_6H_4N(CH_3)_2$; m.w. 135.11; b.p. 212.5; s.w.; s.al.

o-toluidine, N, N-dimethyl-. $CH_3C_6H_4N(CH_3)_2$; m.w. 135.11; m.p. −60.0; b.p. 184.6; s.w.; s.al.

p-toluidine, N, N-dimethyl-. $CH_3C_6H_4N(CH_3)_2$; m.w. 135.11; liq.; b.p. 210-11; s.w.; s.al.

m-toluidine, N-methyl-. $CH_3C_6H_4NHCH_3$; m.w. 121.09; liq.; b.p. 206; i.w.; s.al.

o-toluidine, N-methyl-. $CH_3C_6H_4NHCH_3$; m.w. 121.09; liq.; b.p. 207; i.w.; s.al.

p-toluidine, N-methyl-. $CH_3C_6H_4NHCH_3$; m.w. 121.09; liq.; b.p. 206-8 i.w.; s.al.

toluidine, N-naphthyl-. See naphthylamine, N-tolyl-.

m-toluidine, 2-nitro- (3-methyl-2-nitroaniline). $NO_2(CH_3)C_6H_3NH_2$; m.w. 152.08; yel. need.; m.p. 53; s.w.; s.al.

m-toluidine, 4-nitro- (3-methyl-4-nitroaniline). $NO_2(CH_3)C_6H_3NH_2$; m.w. 152.08; yel. need. f.w.; m.p. 138; s.w. s.al.

m-toluidine, 5-nitro- (3-methyl-5-nitroaniline). $NO_2(CH_3)C_6H_3NH_2$; m.w. 152.08; or. need.; m.p. 98.4; s.w.; s.al.

m-toluidine, 6-nitro- (3-methyl-6-nitroaniline). $NO_2(CH_3)C_6H_3NH_2$; m.w. 152.08; yel. leaf. f.w.; m.p. 109; s.w.; s.al.

o-toluidine, 3-nitro- (2-methyl-3-nitroaniline). $NO_2(CH_3)C_6H_3NH_2$; m.w. 152.08; yel. rhomb. leaf.; m.p. 91.5; s.al.

o-toluidine, 4-nitro- (2-methyl-4-nitroaniline). $NO_2(CH_3)C_6H_3NH_2$; m.w. 152.08; yel. monocl. f.w.; m.p. 129; s.w.; s.al.

o-toluidine, 5-nitro- (2-methyl-5-nitroaniline). $NO_2(CH_3)C_6H_3NH_2$; m.w. 152.08; yel. monocl. f.al.; m.p. 105; s.w.; s.al.

o-toluidine, 6-nitro- (2-methyl-6-nitroaniline). $NO_2(CH_3)C_6H_3NH_2$; m.w. 152.08; or. pr.f.al.; m.p. 96; s.w.; s.al.

p-toluidine, 2-nitro- (4-methyl-2-nitroaniline; m-nitro-p-toluidine). $NO_2(CH_3)C_6H_3NH_2$; red monocl. pr. f.al.; m.p. 117; s.w.; s.al.

p-toluidine, 3-nitro- (4-methyl-3-nitroaniline). $NO_2(CH_3)C_6H_3NH_2$; m.w. 152.08; yel. monocl. f.w.; m.p. 77.5; s.w.; s.al.

toluidinesulfonic acid. See toluenesulfonic acid, amino-.

m-toluidine, 4-m-tolylazo- (4-amino-2, 3'-dimethylazobenzene). $CH_3C_6H_4N{:}NC_6H_3(CH_3)NH_2$; m.w. 225.14; yel. br. need. f.al.; m.p. 80; sl.s.w.; s.al.

o-toluidine, 4-o-tolylazo- (4'-amino-2, 3'-dimethylazobenzene). $CH_3C_6H_4N{:}NC_6H_3(CH_3)NH_2$; m.w. 225.14; yel. monocl. pl.; m.p. 100; s.w.; s.al.

o-toluidine, 4-p-tolylazo- (4-amino-3, 4'-dimethylazobenzene). $CH_3C_6H_4N{:}NC_6H_3(CH_3)NH_2$; m.w. 225.14; yel. pl.f.al.; m.p. 127-8; i.w.; s.al.

m-tolunitrile (m-methylbenzonitrile). $CH_3C_6H_4CN$; m.w. 117.06; col. liq.; m.p. −23; b.p. 214; s.al.

o-tolunitrile (2-methylbenzenecarbonitrile; o-methylbenzonitrile). $CH_3C_6H_4CN$; m.w. 117.06; col. liq.; m.p. −13 to −14; b.p. 204; i.w.; s.al.

p-tolunitrile (4-methylbenzenecarbonitrile; p-methylbenzonitrile). $CH_3C_6H_4CN$; m.w. 117.06; wh.-yel. need. f.al.; m.p. 29.5; b.p. 217; i.w.; s.al.

α-tolunitrile (benzyl cyanide; phenylacetonitrile). $C_6H_5CH_2CN$; m.w. 117.06; col. liq.; m.p. −23.8; b.p. 234; i.w.; s.al.

p-tolunitrile, 2-amino- (homoanthranilonitrile). $CH_3C_6H_2(NH_2)CN$; m.w. 132.08; need. f.al.; m.p. 136; i.w.; s.al.

α-tolunitrile, α-keto-. See benzoyl cyanide.

α-tolunitrile, o-nitro- (o-nitrobenzyl cyanide). $NO_2C_6H_4CH_2CN$; m.w. 162.06; need. f.w.; m.p. 82.5-4.0; s.w.; s.al.

α-tolunitrile, p-nitro-. $NO_2C_6H_4CH_2CN$; m.w. 162.06; leaf. or p.f.al.; m.p. 117; i.w.; s.al.

toluol. See toluene.

p-toluquinaldine. See quinoline, 2, 6-dimethyl-.

toluquinone (2-methylquinone; p-toluquinone). $CH_3C_6H_3O_2$; m.w. 122.05; yel. leaf. or need.; m.p. 69; s.w.; s.al.

α-toluyl chloride (phenylacetyl chloride). $C_6H_5CH_2COCl$; m.w. 154.51; col. fum. liq.

toluylene. See stilbene.

toluylenediamine. See tolylenediamine.

tolyl aldehyde. See m-, o-, p-, or α-tolualdehyde.

tolyl bromide. See toluene, bromo-.

tolyl chloride. See toluene, o-, m-, or p-

chloro-; see also xylene, α-chloro-.

tolylene. See xylylene.

2-m-tolylenediamine (2, 6-toluenediamine; 2, 6-diaminotoluene; 2, 6-toluylenediamine). $CH_3C_6H_3(NH_2)_2$; m.w. 122.09; pr.f.w.; m.p. 105; s.w.; s.al.

4-m-tolylenediamine (2, 4-toluenediamine; 2, 4-diaminotoluene; 2, 4-toluylenediamine). $CH_3C_6H_3(NH_2)_2$; m.w. 122.09; col. rhomb., need. f.w., pr.f.al.; m.p. 99; b.p. 280; s.w.: s.al.

5-m-tolylenediamine (3, 5-toluenediamine, 3, 5-diaminotoluene; 3, 5-toluylenediamine). $CH_3C_6H_3(NH_2)_2$; m.w. 122.09; leaf. f.bz.; m.p. 64; b.p. 274; s.w.; s.al.

3-o-tolylenediamine (2, 3-toluenediamine; 2, 3-diaminotoluene; 2, 3-toluylenediamine). $CH_3C_6H_3(NH_2)_2$; m.w. 122.09; cr.; m.p. 61; b.p. 255; s.w.; s.al.

4-o-tolylenediamine (3, 4-toluenediamine; 3, 4-diaminotoluene; 3, 4-toluylenediamine). $CH_3C_6H_3(NH_2)_2$; m.w. 122.09; col. leaf. f. lgr.; m.p. 88.5; b.p. 265; s.w.

p-tolylenediamine (2, 5-toluenediamine; 2, 5-diaminotoluene; 2, 5-toluylenediamine). $CH_3C_6H_3(NH_2)_2$; m.w. 122.09; leaf. f.bz.; m.p. 64; b.p. 274; s.w.; s.al.

tolylene glycol. See hydrobenzoin.

tolyl mercaptan. See cresol, thio-.

tolyl mustard oil. See isothiocyanic acid, tolyl ester.

o-tolyl phosphate (tri-o-cresyl phosphate). $(CH_3C_6H_4)_3PO_4$; m.w. 368.18; liq.; i.w.; s.al.

p-tolyl phosphate (tri-p-cresyl phosphate). $(CH_3C_6H_4)_3PO_4$; m.w. 368.18; need. f.w.; m.p. 77-8; i.w.; s.al.

ton. A measure of weight equal to 2000 pounds, often called the short ton.

ton, long. A measure of weight equal to 2240 pounds.

tone scale. The arrangement of a color and all its gradations by adding white to form tints and black to form shades.

toner. A pure metallic salt of an organic color.

Tonsil. An activated decolorizing earth.

tonus. In physiology, the normal degree of vigor or tension, or the healthy state of a part as muscle tone, tonicity or tonus.

topaz. A mineral, $(AlF)_2SiO_4$ or $[Al(F,OH)]_2SiO_4$; rhomb., col. or yel., lt. blue, grn. or pink Brazil; sp.gr. 3.4-3.65; hardness 8.

topaz, false. See cirtine.

topping plant. A refinery which produces fuel oil.

Toplast. A synthetic tar-acid resin.

tops. Unrefined distillate obtained by topping a crude petroleum.

torbernite (copper uranite). A radioactive mineral, $Cu(UO_2)_2P_2O_8 \cdot 12H_2O$; tetr., grn.; sp.gr. 3.22-3.60; hardness 2.0-2.5.

torev. Quantity of power transmitted by a torque of 1 ft.-lb. at one revolution per minute.

Tornesit. A chlorinated rubber, available in powder form, translucent and opaque, colored; thermoplastic, of excellent resistance to acids, alkalies, and alcohols.

torque. Turning or twisting effect of a rotating body; see also, moment.

torque, parasitic. Friction and damping due to pressure and current field.

Torricelli's law. Velocity of flow of a non-viscous fluid from an opening at a depth, h, below the height of the free surface in a vessel, acted upon by gravity, g, only equals $\sqrt{2gh}$.

Torricellian vacuum. Vacuum produced by inverting a tube filled entirely with mercury into a dish of mercury, thus producing a column of mercury whose pressure is equal to atmospheric pressure and above which a Torricellian vacuum exists.

torsion. The act of twisting; the state or condition of being twisted; change in relative position of the parts of any solid due to rotation about a common axis.

touchstone. See Lydian stone.

tough. Term applied to plastic substances having a large yield value and low mobility, e.g. ester gum.

tourmaline. A mineral, $(H, Li, Na, K)_9Al_3[B \cdot OH]_2Si_4O_{18}(+Fe_2O_3, FeO, MgO, MnO)$?; hex. (rhbdr.), blk.-br.-bl.-grn., red; rar. wh. or col.; sp.gr. 2.9-3.2; hardness 7.0-7.5; has the property of polarizing transmitted light.

Townsend characteristic. Current voltage characteristic curve of a photoelectric cell under constant illumination and at voltages under glow potential.

Townsend discharge (corona discharge). Space-charge free electrical discharge in a gas at a moderate pressure above 0.1 mm.

toxalbumins. Poisons of protein origin including the snake poisons and those of plant origin, to be distinguished from the ptomaines.

toxicarol. $C_{32}H_{32}O_7$; m.w. 410.17; bright yel.-grn. hex. pl. or rods; m.p. 219; s.al.

toxicology. The scientific study of poisons, their action, detection and the treatment for their effects upon an organism.

toxilic anhydride. See maleic anhydride.

toxins. Poisonous substances closely allied to enzymes and produced during the metabolism of pathogenic bacteria.

toxophore. That portion of a toxin to which the poisoning power is attributed.

tragacanth gum. See gum, tragacanth.

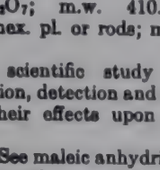
tragacanthin. See bassorin.

Tragasol. A tough jelly obtained from the carob bean.

train oil. See oil, whale.

Tramolin. A sulfonated vegetable oil used as a wetting agent in the textile industry.

trans compound. Compound, being a geometric isomer, in which the two similar groups of the molecule are remote, rather than next to each other, e.g. fumaric acid



See cis compound.

transcendental. A term applied in mathematics to an equation, curve or quantity which cannot be defined or represented by an algebraic expression of a finite number of terms, with numeral and determinate indexes, e.g. all exponential, logarithmic and trigonometric functions.

transducer. An apparatus for leading energy from one electrical or communication system to another.

transference number (transport number; Hittorf number). The ratio between the equivalents of the ionic constituent transferred and the equivalents of electricity passed thru an electrolytic cell.

transformation period. Half value time period for loss of activity of a radioactive substance.

transformation ratio. Ratio of voltage in secondary to primary in a transformer.

transformer. A device of two or more electric circuits interlinked by a magnetic circuit, used to transfer currents at a higher or lower voltage.

transformer oil. See oil, transformer.

transit. Instrument used in surveying for measuring angles, bearings and leveling.

transition element. An element occurring in the triads of group VIII of the Periodic table; an element whose two outermost electronic groups, or energy levels, are imperfect, i.e. not containing 8 or 18 electrons, e.g. iron, platinum, rhodium.

transmission factor. See attenuation factor.

translational energy. Energy of a molecule due to translational motion of its whole mass.

transmutation. A radical change from one element into another, e.g. mercury into gold.

transoid (t-). Term used instead of trans, where it is impossible to determine configuration absolutely, indicating reactivity of hydroxyl group.

transport number. Fall in concentration at anode divided by total fall at anode and cathode; a number indicating velocity of an ion during electrolysis; see transference number.

transposition. Removal of terms from one member of an equation to the other.

trapezium. Quadrilateral plane figure with no two sides parallel.

trapezoid. Quadrilateral figure with two parallel sides.

Traube's rule. A rule stating that the adsorption of a homologous series of fatty acids from aqueous solution increases with the high members of the series.

trehalose. Simplest form of combination of two hexoses, permitting of no structural isomerism; a disaccharide in which the monosaccharide remainders are mutually bound in the glucoside manner.

tremolite (grammatite). A mineral, $CaMg_3(SiO_4)_4$; monocl., wh., gray, grnsh., yelsh.; sp.gr. 2.9-3.2; hardness 5-6.

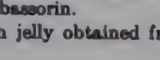
triacetamide. $(CH_3CO)_3N$; m.w. 143.08; need. f.et.; m.p. 79.

triacetin. See glycerol, triacetate.

triacetonamine (2, 2, 6, 6-tetramethyl-4-piperidone). $C_9H_{17}NO \cdot H_2O$; m.w. 173.16; tetr. need. f.w.; m.p. anh. 40, $1H_2O$ 58; s.w.; s.al.

triacontane (n-triacontane). $CH_3(CH_2)_{28}CH_3$; m.w. 422.48; cr.; m.p. 66.1; b.p. 186; i.w.; s.al.

triad. A trivalent element, e.g. nitrogen



forms a triad in NH_3, H—N—H.

triamine. A compound containing three amino groups, e.g. benzenetriamine, $C_6H_3(NH_2)_3$.

triamylamine. $(C_5H_{11})_3N$; m.w. 227.27; sp.gr. 0.7937; distillation range 230-260.; i.w.; used in dye industry and as a substitute in fields where the mono- and di-amylamines are used.

triamyl borate. $(C_5H_{11})_3BO_3$; m.w. 272.08; sp.gr. 0.845; water-white; b.p. 220-280; hydrolyses slowly; used in varnish formulation.

triamyl citrate. $C_3H_4(OH)(COOC_5H_{11})_3$; m.w. 402.29; straw color; sp.gr. 1.152; decomposes on heating.

triangle or polygon of forces. If three or more forces acting on the same point are in equilibrium the vectors representing them form, when added, a closed figure.

triangle, scalene. A triangle with three unequal sides.

triazene, 1, 3-bis (p-nitrophenyl)-. See diazoaminobenze, 4, 4'-dinitro-.

triazene, 1, 3-di-1-naphthyl-. See 1, 1'-diazoaminonaphthalene.

triazene, 1, 3-di-2-naphthyl-. See 2, 2'-diazoaminonaphthalene.

sym-triazine-2, 4-diol, 6-amino-. See ammelide.

triazene, 1, 3-diphenyl-. See diazoaminobenzene.

sym-triazine, hexahydro-1, 3, 5-triphenyl- (anhydroformaldehydeaniline; methyleneaniline; trimethylenetrianiline). $(C_6H_5N \cdot CH_2)_3$; m.w. 315.19; wh. silky need.; m.p. 45.5; b.p. 185; s.w.; s.al.

triazene, 1-phenyl-3-p-tolyl- (4-methyldiazoaminobenzene). $C_6H_5N_2NH-C_6H_4CH_3$; m.w. 211.13; ylsh. leaf.; m.p. 90-1; i.w.

sym-triazine, 2, 4, 6-triamino-. See melamine.

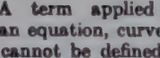
sym-triazine, trichloro-. See cyanuric chloride.

sym-triazinetriol. See cyanuric acid.

sym-triazin-2-ol, 4, 6-diamino-. See ammeline.

triazobenzene. See benzene, triazo-.

1, 2, 4-triazole (sym-triazole [one form]; pyrro [AB_2] diazole).



m.w. 69.05; need.; m.p. 121; b.p. 260; s.w.; s.al.

1, 2, 4-triazole, 4, 5-dihydro-1, 4-diphenyl-3, 5-phenylimino-. See nitron.

tribasic. Pertaining to acids which contain three replaceable hydrogen atoms, e.g. phosphoric acid, H_3PO_4, or to salts obtained from a tribasic acid, e.g. trisodium phosphate, Na_3PO_4.

tribenzaldiamine. See hydrobenzamide.

tribenzoin. See glycerol, tribenzoate.

tribenzylamine. $(C_6H_5CH_2)_3N$; m.w. 287.17; monocl. f.al.; m.p. 92; b.p. 380-90; s.w.; s.al.

triboelectric. Electrifiable by friction.

triboluminescence. Luminescence produced by friction.

tribophosphorescence. Phosphorescence produced by friction.

tribromohydrin. See propane, 1, 2, 3-tribromo-.

tribromomethane. See bromoform.

tributylamine (tri-n-butylamine). $(CH_3CH_2CH_2CH_2)_3N$; m.w. 185.22; deliq. col. liq.; b.p. 214; s.w.; s.al.

tributyl citrate. $(CH_3COOC_4H_9)_3C(OH)COOC_4H_9$; m.w. 360.25; light straw liq.; sp.gr. 1.045; b.p. 233.5 $^{25.5}$ (approx.); m.p. −20; i.w.; a plasticizer for cellulose acetate and an antifoam agent for water dispersions.

tributyl phosphate. $(C_4H_9)_3PO_4$; m.w. 266.23; col. liq.; sp.gr. 0.9763; b.p. 175 ^{25}; s.w.; a super-high-boiling solvent for cellulose nitrate lacquers, dopes, inks; pyroxylin plasticiser.

tricarballylic acid (1, 2, 3-propanetricarboxylic acid). $HOOCCH_2CH(COOH)CH_2COOH$; m.w. 176.06; col. rhomb. pr.f.w.; m.p. 162-3; s.w.; s.al.

α-toluic acid, p-methyl- (p-tolylacetic acid). $CH_3C_6H_4CH_2COOH$; m.w. 150.08; col. need. f.w.; m.p. 91; b.p. 266; s.w.; s.al.

tricarballylic acid, α, β-dihydroxy- (1, 2-dihydroxy-1, 2, 3-propanetricarboxylic acid; hydroxycitric acid). $COOHCH_2COH(COOH)-CHOHCOOH$; m.w. 208.06; need.; m.p. 160; s.w.; s.al.

tricarballylic acid, α-hydroxy-. See isocitric acid.

tricarballylic acid, β-hydroxy-. See citric acid.

tricarballylic acid, α, α, β-trimethyl-. See camphoronic acid.

tricarbonimide. See fulminuric acid.

trichloracetic acid. See acetic acid, trichloro-.

trichlorbenzene (trichlorbensol). See benzene, trichloro-.

trichlornaphthalene. See naphthalene, trichlor-.

trichloroethylene. See ethylene, trichloro-.

trichloronaphthalene. See naphthalene, trichlor-.

Trichlene. Trichlorethylene.

triclinic. Referring to crystals with three unequal axes intersecting at angles, one or two of which are equal and not greater than 90°.

tricosane (n-tricosane). $CH_3(CH_2)_{21}CH_3$; m.w. 324.37; glit. leaf. f.al.; m.p. 47.7; b.p. 234 ^{15}; i.w.; s.al.

12 tricosanone (dihendecyl ketone; diundecyl ketone; laurone). $[CH_3(CH_2)_{10}]_2CO$; m.w. 338.36; sc. or pl.; m.p. 69; i.w.; s.al.

tricresyl phosphate (Lindol). See tolyl phosphate.

tricyanic acid. See cyanuric acid.

tricyanogen chloride. See cyanuric chloride.

tridecanal, oxime (n-tridecylaldoxime). $CH_3(CH_2)_{11}CH:NOH$; m.w. 231.22; need. f.dil. al.; m.p. 80.5; i.w.; s.al.

tridecane. $CH_3(CH_2)_{11}CH_3$; m.w.

184.22; col. liq.; m.p. −6.2; b.p. 234; i.w.; s.al.

tridecane, 1-amino-. See tridecylamine.

tridecanoic acid (n-tridecoic acid; n-tridecylic acid). $CH_3(CH_2)_{11}COOH$; m.w. 214.20; pl.; m.p. 51; b.p. 236 [100]; i.w.; s.al.

tridecanoic acid, 13-(2-cyclopentenyl)-. See chaulmoogric acid.

1-tridecanol (prim-n-tridecyl alcohol). $CH_3(CH_2)_{11}CH_2OH$; m.w. 200.22; col. cr.; m.p. 30.63; b.p. 155-6 [15]; i.w.; s.al.

2-tridecanone (hendecyl methyl ketone). $CH_3CO(CH_2)_{10}CH_3$; m.w. 198.20; cr.; m.p. 28; b.p. 263; i.w.; s.al.

7-tridecanone (dihexyl ketone; enanthone; oenanthone). $[CH_3(CH_2)_5]_2CO$; m.w. 198.20; leaf. f.al.; m.p. 33; b.p. 255 [760]; s.al.

n-tridecoic acid. See tridecanoic acid.

n-tridecyl alcohol. See 1-tridecanol.

n-tridecylaldoxime. See tridecanal, oxime.

tridecylamine (prim-n-tridecylamine; 1-aminotridecane). $CH_3(CH_2)_{12}NH_2$; m.w. 199.23; m.p. 27; b.p. 265.

tridecylene. $C_{13}H_{26}$; m.w. 182.20; col. liq.; b.p. 232.7; i.w.; s.al.

n-tridecylic acid. See tridecanoic acid.

tridymite. A mineral, SiO_2; rhomb., col. or wh.; sp.gr. 2.28-2.33; hardness 7.

triethanolamine. See ethanol, 2, 2′, 2″-nitrilotri-.

triethanolamine linoleate. $(HOCH_2CH_2)_3N \cdot HOOCH_{31}C_{17}$; tan colored paste; emulsifying agent for oils in manufacture of cosmetics, polishes, etc.

triethanolamine stearate. A soap formed from triethanolamine and stearic acid; used as emulsifying agent for mineral and vegetable oils, paraffin, and kerosene.

triethylamine. $(C_2H_5)_3N$; m.w. 101.13; col. or straw-colored liq.; sp.gr. 0.73; m.p. −114.8; b.p. 89.5; i.w.; s.al.; used in the manufacture of intermediates, dyestuffs and leather.

triethylamine, β, β-diethoxy- (diethylaminoacetal). $(C_2H_5)_2NCH_2CH(OC_2H_5)_2$; m.w. 189.19; liq.; b.p. 194-5; s.w.; s.al.

triethylamine, β, β′-dihydroxy-. See ethanol, 2, 2′-ethyliminodi-.

triethylamine, hydrochloride (triethylammonium chloride). $(C_2H_5)_3N \cdot HCl$; m.w. 137.59; cr.f.al.; m.p. 254; s.w.; s.al.

triethylamine, β-hydroxy-. See ethanol, 2-diethylamino-.

triethylamine, β, β, β-trihydroxy-. See ethanol, 2, 2′, 2″-nitrilotri-.

triethyl arsenate. See ethyl arsenate.

triethyl arsenite. See ethyl arsenite.

triethyl bismuth. See bismuth triethyl.

triethyl borate. See ethyl borate.

triethylene glycol (2, 2′-ethylenedioxydiethanol; glycol bis [hydroxyethyl] ether). $(CH_2OCH_2CH_2OH)_2$; m.w. 150.11; col. liq.; m.p. −5; b.p. 280-90; s.w.; s.al.

triethylene tetramine. $(CH_2NHCH_2CH_2NH_2)_2$; a hygroscopic, viscous, dark yellow liquid; sp.gr. 0.980-0.985 [15]; b.p. 260-90; s.w.; used to saponify acidic materials.

triethylolamine. See ethanol, 2, 2′, 2″-nitrilotri-.

triethyl phosphate. See ethyl phosphate.

triethyl phosphite. See ethyl phosphite.

trifuraldiamine. See furfural, hydramide.

trifurylamine (α, α′, α″-tri-2-furyltrimethylamine). $(C_4H_3OCH_2)_3N$; m.w. 257.13; col. liq.; b.p. 133-8 [1]; i.w.

triglyceride. Glycerin wherein all three hydroxy groups have been esterified by fatty acids, e.g. glyceryl tripalmitate.

trigonelline (nicotinic acid N-methylbetaine). $C_7H_7NO_2$; m.w. 137.06; hyg. pr.f.al.; s.w.; s.al.

trigonometry. The branch of mathematics dealing with measurement of angles and sides of triangles.

trihorn. Figure formed when three curves have a common tangent at their common point, but do not have higher contact at this point.

trihydric alcohol. An alcohol containing three hydroxy groups, e.g. glycerin, $C_3H_5(OH)_3$.

triisoamylamine. $[(CH_3)_2CHCH_2CH_2]_3N$; m.w. 227.27; col. liq.; b.p. 237; i.w.; s.al.

triisoamyl borate. See isoamyl borate.

triisobutylamine. $[(CH_3)_2CHCH_2]_3N$; m.w. 185.22; col. liq.; m.p. −21.8; b.p. 191.5; i.w.; s.al.

triisobutyl arsenite. See isobutyl arsenite.

triketone, diphenyl-. See propanetrione, diphenyl-.

trilaurin. See glycerol, trilaurate.

trimellitic acid (1, 2, 4-benzenetricarboxylic acid). $C_6H_3(COOH)_3$; m.w. 210.05; col. need. f.w.; s.w.; s.al.

trimesic acid (1, 3, 5-benzenetricarboxylic acid). $C_6H_3(COOH)_3$; m.w. 210.05; col. pr.f.w.; m.p. 350; s.al.

trimesic acid, hydroxy- (phenol-2, 4, 6-tricarboxylic acid). $HOC_6H_2(COOH)_3$; m.w. 226.05; need. f.w.; s.al.

trimesitic acid (2, 4, 6-pyridinetricarboxylic acid). $C_5H_2N(COOH)_3$; m.w. 211.05; pl.f.dil. H_2SO_4; s.w.

trimethylamine. $(CH_3)_3N$; m.w. 59.08; col. gas; m.p. −124; b.p. 3.5; s.w.; s.al.

trimethylamine, hydrochloride (trimethylammonium chloride). $(CH_3)_3N \cdot HCl$; m.w. 95.54; col. deliq. cr. f.al.; s.w.; s.al.

trimethylamine, α, α′, α″-tri-2-furyl-. See trifurfurylamine.

trimethyl borate. See methyl borate.

trimethylene. See cyclopropane.

trimethylene bromide. See propane, 1, 3-dibromo-.

trimethylene bromohydrin. See 1-propanol, 3-bromo-.

trimethylene chloride. See propane, 1, 3-dichloro-.

trimethylene chlorohydrin. See 1-propanol, 3-chloro-.

trimethylene cyanide. See glutaronitrile.

trimethylenediamine. See 1, 3-propanediamine.

trimethylene dibromide. See propane, 1, 3-dibromo-.

trimethylene dichloride. See propane, 1, 3-dichloro-.

trimethylene dicyanide. See glutaronitrile.

trimethylene glycol. See 1, 3-propanediol.

trimethylene glycol, diphenyl ether. See propane, 1, 3-diphenoxy-

trimethylene glycol, α-methyl-. See 1, 3-butanediol.

trimethylene glycol, methylene ether. See m-dioxane.

trimethylene glycol, α, α, α′-trimethyl-. See 2, 4-pentanediol, 2-methyl-.

trimethyleneimine (tetrahydroazete; azetidine). $CH_2CH_2CH_2NH$; m.w. 57.06; col. liq.; odor NH_3; b.p. 63; s.w.

trimethylene methylene dioxide. See m-dioxane.

trimethylenetrianiline. See sym-triazine, hexahydro-1, 3, 5-triphenyl-.

trimethylene trisulfide. See formaldehyde, thio- (trimer).

trimethyl phosphate. See methyl phosphate.

trinitrin. See nitroglycerin.

triolein. See glycerol, trioleate.

triolite. See iron sulfide(ous).

trional (2, 2-bis [ethylsulfonyl] butane). $CH_3C(SO_2C_2H_5)_2CH_2CH_3$; m.w. 242.26; col. tab. f. al. or et.; m.p. 74-6.

triose. A sugar consisting of three carbon atoms.

sym-trioxane (1, 3, 5-trioxane; α-trioxymethylene). $OCH_2OCH_2OCH_2$; m.w. 90.05; need.; m.p. 64; s.w.; s.al.

sym-trioxanetriimine. See cyamelide.

sym-trioxane, 2, 4, 6-trimethyl-. See paraldehyde.

trioxymethylene. See polyoxymethylene.

α-trioxymethylene. See s-trioxane.

trip scale. See scale, trip.

tripalmitin. See glycerol, tripalmitate.

triphenyl. See terphenyl.

triphenylamine. $(C_6H_5)_3N$; m.w. 245.13; monocl. pr.f.et.; m.p. 126.5; b.p. 365; i.w.; s.al.

triphenylene (benzo[l]phenanthrene; isochrysene). $C_{18}H_{12}$; m.w. 228.09; wh. cr.; m.p. 198.5; i.w.; s.al.

triphenylguanidine. See guanidine, triphenyl-.

triphenyl phosphate. $(C_6H_5)_3PO_4$; a colorless, odorless crystalline solid; m.p. 49; b.p. 245; s.al.; i.w.; a camphor substitute in celluloid and airplane dope, in impregnating roofing paper, and in stabilising and fireproofing acetyl cellulose.

triphylite-lithiophyllite. A mineral, $Li(Fe,Mn)PO_4$; rhomb., grnsh., gray, blsh., pink, yel. to br.; sp.gr. 3.42-3.56; hardness 4.5-5.0.

triple bond. In organic chemistry, the symbol representing the sharing of three pairs of electrons between two carbon atoms or between a carbon and a nitrogen, indicating the highest possible degree of unsaturation, e.g. acetylene, HC≡CH and methyl nitrile, CH_3—C≡N.

triple point. Temperature at which a solid, its liquid and its vapor are in equilibrium; point of three-phase equilibrium on temperature-pressure diagram.

tripoli. A porous siliceous earth resulting from the natural decomposition of siliceous sandstone ("chert"), used as an abrasive, polishing powder, filtering material, and paint and rubber filler.

tripolite. See infusorial earth.

tripropylamine (n). $(CH_3CH_2CH_2)_3N$; m.w. 143.17; col. liq.; m.p. −93.5; b.p. 156; s.w.; s.al.

triquinoyl hydrate. See cyclohexanehexone, hydrate.

tristimulus specification. Three numbers that give proportions of primary colors present in a mixed color.

trisulfide, diallyl. See allyl trisulfide.

tritan. See methane, triphenyl-.

tritan, α-benzyl-. See ethane, 1, 1, 1, 2-tetraphenyl-.

tritan, 4, 4′-dimethyl-. See methane, phenyldi-p-tolyl-.

tritan, α-ethyl-. See propane, 1, 1, 1-triphenyl-.

tritan, α-methane-. See ethane, 1, 1, 1-triphenyl-.

tritan, m- or p-methyl-. See methane, diphenyltolyl-.

tritanol. See carbinol, triphenyl-.

sym-trithiane. See formaldehyde, thio-.

sym-trithiane, 2, 4, 6-trimethyl-(α) (α-trithioacetaldehyde, α-trimolecular thioacetaldehyde). $SCH(CH_3)SCH(CH_3)SCHCH_3$; m.w. 180.27; pr.; m.p. 101; b.p. 247.

sym-trithiane, 2, 4, 6-trimethyl- (β) (β-trithioacetaldehyde; β-trimolecular thioacetaldehyde). $SCH(CH_3)SCH(CH_3)SCHCH_3$; m.w. 180.27; m.p. 126.

sym-trithiane, triphenyl- (higher-melting) (β-trithiobenzaldehyde). $[SCH(C_6H_5)]_3$; m.w. 366.32; need.; m.p. 225; s.al.

sym-trithiane, triphenyl- (lower-melting) (α-trithiobenzaldehyde). $(SCHC_6H_5)_3$; 366.32; wh. amor. powd.; m.p. 160; i.w.; i.al.

tritium. The hydrogen isotope having an atomic weight of three.

Triton B. Tetra-alkyl ammonium hydroxide; a cellulose solvent and a swelling agent.

Triton K-60. Tetra-alkyl quarternary ammonium hydroxide; a softening agent and plasticiser.

Triton M-25. The sodium salt of an organic ether acid used as a wetting agent and penetrant in the textile industry.

Triton S-18. A salt of oleic and palmitic acid reacted with an aryl alkylated amine; containing no sodium; a wetting and emulsifying agent.

Triton S-51. A sulfonated long chain aromatic amine.

Triton W-30. A sulfonated aromatic ether alcohol used as a wetting and dispersing agent and penetrant in the textile and cosmetic industries.

Triton 720, 812. A sulfonated ether used as a detergent, stable in hard water, acids, and alkalies and possessing good cleaning qualities; used in the textile and cosmetic industries.

tritopine. See laudanidine.

trituration. Extraction of a material by grinding it in a suitable solvent.

trityl. See methyl, triphenyl-.

trivalent. Referring to a combining power of three, e.g. aluminum in $AlCl_3$.

trögerite. A radioactive mineral, $(UO_2)_3As_2O_8 \cdot 12H_2O$; monocl.; sp.gr. 3.3; soft.

Trolitul. A polystyrene resin, thermoplastic, available in translucent, colored and colorless forms, of good resistance to acids, alkalies, alcohols and oils.

Trolon. A synthetic tar-acid resin.

Trolsoil. A petroleum solvent; boiling range 94.4-121.7.

trona (urao). A mineral, $Na_2CO_3 \cdot HNaCO_3 \cdot 2H_2O$; monocl., gray or yelsh. wh.; sp.gr. 2.11-2.147; hardness 2.5-3.0.

troostite. A variety of willemite (q.v.) containing manganese.

troostite. In the transformation of austenite in steel the stage following martensite and preceding sorbite; mixture of iron and iron carbide in carbon steel.

troostite, granular. See granular troostite.

troostite, lamellar. See lamellar troostite.

tropacocaine (benzoylpseudotropeine). $C_{15}H_{19}NO_2$; m.w. 245.16; glit. need. f.et.; m.p. 49; s.w.; s.al.

tropacocaine, hydrochloride. $C_{15}H_{19}NO_2 \cdot HCl$; m.w. 281.62; col. need. or pl.f.w. + al.; m.p. 271; s.w.; s.al.

tropaic acid. See tropic acid.

tropic acid (α-phenylhydracrylic acid; tropaic acid). $C_6H_5CH(COOH)CH_2OH$; m.w. 166.08; need. or pl.f.al.; m.p. 117-8; s.al.

tropic acid, tropine ester. See atropine.

tropine (8-methyl-3-nortropanol; N-methyltropoline). $C_8H_{15}NO$; m.w. 141.13; hyg. tab.f.et.; m.p. 63; b.p. 233; s.w.; s.al.

tropinecarboxylic acid. See l-ecgonine.

tropine, chloroplatinate. $(C_8H_{15}NO \cdot HCl)_2PtCl_4$; m.w. 692.24; or.-red monocl.; m.p. 198-200; s.w.; i.al.

tropism. In biology, a turning or movement of an organism to ward the source of a stimulus such as heat or light.

tropoline, N-methyl-. See tropine.

tropopause. Upper boundary of the troposphere.

troposphere. Atmosphere directly above the earth in which vertical convection currents and clouds occur.

Trouton's rule. Molal heat of vaporization of normal liquids at the boiling point under atmospheric pressure divided by the absolute boiling temperature is a constant, approximately 22. (The molecular weight times latent heat of vaporization equals the molal heat of vaporization.)

truncation. In geometry, the cutting off of the vertex of a cone or pyramid; in crystallography, the replacement of an edge by a plane, especially a plane equally inclined to the adjoining faces.

tryptase. An enzyme which changes proteins to albumineses and peptones with an optimum activity at pH

7 to 9, e.g. pancreatic trypain.

trypsin. An enzyme (digestive ferment) of the pancreatic juice, capable of hydrolyzing proteins into albuminoses and peptones.

d-tryptophan (d-β-[3-indyl] alanine; d-α-amino-3-indolepropionic acid). $C_6H_4NCH_2CH(NH_2)COOH$; m.w. 204.11; m.p. 281-2.

dl-tryptophan (dl-β-[3-indyl] alanine; dl-α-amino-3-indolepropionic acid). $C_6H_4NCH_2CH(NH_2)COOH$; m.w. 204.11; col. hex. pl.; m.p. 283-5; s.w.; s.al.

l-tryptophan (l-α-amino-3-indolepropionic acid; l-β-3-indylalanine). C_6H_4-NHCH:$CCH_2CH(NH_2)COOH$; m.w. 204.11; col. hex. leaf.; m.p. 293-5; s.al.

Tuads. Tetramethylthiuram disulfide accelerator.

tube of flow. See stream tube.

tubercle. A nodule or small eminence, as on the skin, or on the fronds of a lichen.

tuff. Porous granular or cellular rocks of diverse origin.

tung oil. See oil, China wood.

tungstate. A salt of tungstic acid, H_2WO_4, e.g. sodium tungstate, Na_2WO_4, which is used in fireproofing fabrics.

tungate. A compound of tung oil with various metallic oxides, used as a paint and varnish drier.

tungsten. W; at. wt. 183.92; cub. gray-blk.; s.g. 19.3; m.p. 3370; b.p. 5900; i.w.; used in filaments for incandescent lamps.

tungsten bromide, di-. WBr_2; m.w. 343.83; bl.-blk., need.; m.p. d. 400.

tungsten bromide, hexa-. WBr_6; m.w. 663.50; bl. blk., need.; s.g. 6.9; i.w.

tungsten bromide, penta-. WBr_5; m.w. 583.58; vlt.-br., need.; m.p. 276; b.p. 333; s.abs.al.

tungsten carbide. WC; m.w. 196.00; gray; s.g. 15.7 [12]; m.p. 2777; b.p. 6000; i.w.

tungsten carbide. W_2C; m.w. 380.00; grn.; s.g. 16.06 [12]; m.p. 2877; b.p. 6000; i.w.

tungsten chloride, di-. WCl_2; m.w. 254.91; gray, amor.; s.g. 5.436.

tungsten chloride, hexa-. WCl_6; m.w. 396.74; cub. dk. bl.; s.g. 3.52; m.p. 275; b.p. 346.7; s.al.

tungsten chloride, penta-. WCl_5; m.w. 361.29; blk., deliq.; s.g. 3.875; m.p. 248; b.p. 275.6.

tungsten chloride, tetra-. WCl_4; m.w. 325.83; gray, deliq.; s.g. 4.624.

tungsten fluoride, hexa-. WF_6; m.w. 298.00; lt. yel. liq.; s.g. g. 12.9 g/l; lq. 3.44; m.p. 2.5; b.p. 19.5.

tungsten iodide, di-. WI_2; m.w. 437.84; br.-grn. amor.; s.g. 6.9; i.w.; i.al.

tungsten iodide, tetra-. WI_4; m.w. 691.68; blk. cr.; s.g. 5.2; s.abs.al.

tungsten oxide, di-. WO_2; m.w. 216.00; rhomb. br.; s.g. 12.11; i.w.

tungsten oxide, tri-. WO_3; m.w. 232.00; rhomb. yel. or yel.-or. powd.; s.g. 7.16; m.p. 1473; i.w.

tungsten oxydibromide, di-. WO_2Br_2; m.w. 375.83; red pr.

tungsten oxydichloride, di-. WO_2Cl_2; m.w. 286.91; lt. yel. tabl.; m.p. 266; s.w.; i.al.

tungsten oxytetrabromide. $WOBr_4$; m.w. 519.66; blk., deliq.; m.p. 277; b.p. 327.

tungsten oxytetrachloride. $WOCl_4$; m.w. 341.83; red. need.; m.p. 211; b.p. 227.5.

tungsten oxytetrafluoride. WOF_4; m.w. 276.00; col. pl., hyg.; m.p. 110; b.p. 187.5.

tungsten phosphide. WP; m.w. 215.02; gray pr.; s.g. 8.5; i.w.

tungsten phosphide. W_2P_3; m.w. 798.04; dk. gray pr.; s.g. 5.21.

tungsten phosphide. WP_2; m.w. 246.04; blk. cr.; s.g. 5.8; i.w.; i.al.

tungsten steel. A steel containing tungsten (10-15), chromium (2-10), vanadium (0.3) and carbon (0.7), used in high-speed tools.

tungsten sulfide, di-. WS_2; m.w. 248.12; dk. gray cr.; s.g. 7.5 [16]; i.w.; i.al.

tungsten sulfide, tri-. WS_3; m.w. 280.18; choc. br. powd.; s.w.

tungstic acid. H_2WO_4; m.w. 250.02; yel.; s.g. 5.5; m.p. $-\frac{1}{2}H_2O$, 100; i.w.

tungstic acid. $H_2WO_4 \cdot H_2O$; m.w. 268.03; wh.; m.p. $H_2W_2O_7$ at 100; s.w.

tungstic acid, boro-. See borotungstic acid.

tungstic acid, dodecasilico-. $H_4[SiW_{12}O_{40}] \cdot 24H_2O$; m.w. 3312.47; trig. col.; m.p. $-18H_2O$, 100; s.w.; s.al.

tungstic acid, meta-. $H_2W_4O_{13}$; m.w. 946.02; cub. yel.; s.w.

tungstic acid, phospho-. See phosphotungstic acid.

tungstic acid, silico-. See silicotungstic acid.

tuno gum. See gum, chicle.

turacine. A red coloring matter, containing 8% copper, found in the feathers of a species of African birds.

Turbex. A synthetic tar-acid resin.

turbidimeter. See nephelometer.

turbulence (sinuosity). Irregular movement of a moving fluid produced by an obstruction, friction or vortex action.

turgescence. Resistance to compression.

turgite (hydrohematite). A mineral, $2Fe_2O_3 \cdot H_2O$; dk. redsh. blk. or br., red; sp.gr. 4.20-5.00; hardness 5.5-6.0.

turgor. State o. tension in a normal living cell.

turkey red. See madder and iron oxide, red.

turkey red oil. See oil, castor, sulfonated.

Turkish geranium oil. See oil, palmarosa.

turmeric. See curcuma.

turmeric, Indian. See hydrastis.

turmeric paper. An indicator; see curcuma.

turmeric root. See hydrastis.

Turnbull's blue. See iron ferricyanide (ous).

turnery plastic. A material from which articles are fabricated by machining operations and not by heat and pressure.

turpentine. A mixture of hydrocarbons (terpenes) produced in nature by the pine, spruce, etc., containing cymene and borneol; sp.gr. 0.860-.866; b.p. 150-170; used in synthetic camphor, paints, polishes, leather dressings and varnishes.

turpentine, spirits. $C_{10}H_{16}$; col. liq.; sp.gr. 0.860-0.865; b.p. 155-162; see turpentine.

turpentine substitutes. Substances, usually petroleum fractions, which are mixed with or entirely replace turpentine.

turpentine, Venice. A yellowish tenacious liquid, containing chiefly pinene, used in varnish.

turquois. A mineral, $H_3(CuOH)[Al(OH)_2]_6(PO_4)_4$; tricl., bl., grn.; sp.gr. 2.60-2.89; hardness 5.

turtle oil. See oil, turtle.

tuyere. An opening for conveying air into a metallurgical furnace.

Twaddell (Tw.). Scale of specific gravity of solutions obtained by multiplying the first two digits to the right of the decimal point of the specific gravity by two, e.g. a specific gravity of 1.2103 becomes 42.06° Tw.

twin axis. The line that is perpendicular to both crystalline axes of a twin crystal.

twinning (twinned crystals). Formation of crystals consisting of two individual crystals, symmetrically united, having one plane of atoms in common.

twist, cable. A twine, cord, or rope construction in which each successive twist is in the opposite direction to the preceding twist, an S/Z/S or Z/S/Z construction. See twist, direction of.

twist, direction of. A yarn or cord has S twist if, when held in a vertical position, the spirals conform in slope to the central portion of the letter "S," and Z twist if the spirals conform in slope to the central portion of the letter "Z."

twist, hawser. A twine, cord, or rope construction in which the single and first ply twist are in the same direction and the second ply twist is in the opposite direction, an S/S/Z or Z/Z/S construction.

Twitchell process. Method of hydrolyzing fats by heating in water with a catalyst, which is usually a sulfo derivative of a fatty acid.

two phase. See phase, two.

two-phase current. Current flowing thru two pairs of wires in separate circuits having a phase difference of ¼ cycle.

Tylose. See Methocel.

tyndallmeter. See nephelometer.

type metal. An alloy of lead, tin, antimony and copper (58:26:15:1) which is easily fusible and expands slightly upon solidification producing sharp castings; used as a printing type.

typp. A unit of yarn number; the number of thousands of yards per pound avoirdupois.

tyramine (p-[β-aminoethyl]phenol; p-hydroxyphenethylamine). $HOC_6H_4CH_2CH_2NH_2$; m.w. 137.09; need. or leaf. f.bs.; m.p. 161; b.p. 180; s.al.

tyrosinase. An enzyme which catalyzes the aerobic oxidation of particular monohydric and ortho-dihydric phenols.

d-tyrosine (d-β-p-hydroxyphenylalanine). $HOC_6H_4CH_2CH(NH_2)COOH$; m.w. 181.09; m.p. 310-4.

dl-tyrosine (dl-β-p-hydroxyphenylalanine). $HOC_6H_4CH_2CH(NH_2)COOH$; m.w. 137.09; need. or leaf. f. bs.; m.p. 161; b.p. 180; s.al.

l-tyrosine (l-α-amino-p-hydroxyhydrocinnamic acid; l-β-[p-hydroxyphenyl-alanine]). $HOC_6H_4CH_2CH(NH_2)COOH$; m.w. 181.09; sm. silk. need. f.w.

tyrosine, 3, 5-dilido-. See iodogorgoic acid.

Tytroven RZB. A salt of a high-molecular-weight sulfo-acid used as a detergent in the textile industry.

U

Ubbelohde drop point. Temperature at which a drop of melted compound separates from its uniformly solid mass, by its own weight, without being influenced by the bulk or weight of the material.

Überspannung. See overvoltage.

udometer. A rain gauge.

Uformite. Urea-formaldehyde resins and solutions.

Uformite 430. A concentrated urea-formaldehyde solution used as an adhesive in the manufacture of durable plywood.

ulexine. See cytisine.

ulexite. A mineral containing boron, $NaCaB_5O_9 \cdot 8H_2O$.

ultimate stress. See tensile strength.

ultra-. Prefix meaning beyond.

ultracentrifuge. A high-speed centrifuge used by Svedburg to determine molecular weights of colloidal particles such as those of proteins.

ultrafiltration. Process of separating water from colloids by suitably supported membranes, using pressure.

ultramarine. $Na_7Al_6Si_6O_{24}S_3$; an artificial lapis lazuli made by heating clay, carbon and sodium sulfate, and used as a blueing in the laundry and in the whitening of paper, sugar and linen; also used in printing inks.

ultramarine blue. See ultramarine.

ultrashort waves (microwaves). Electromagnetic waves of less than 10 meters in wave length or having a frequency of over 30,000 kilocycles per second.

Ultrasit. A synthetic resin.

ultrasonic waves. Sound waves of high frequency beyond the audible range of sound.

ultraviolet. The light waves shorter than the visible blue-violet waves of the spectrum, having wave lengths of 136-4000 Å.

Ultravon. Sulfonates of a complex stearyl-alkyl compound used as a detergent of neutral reaction and a dispersing agent for lime soap.

Ultrawet. An aromatic monosodium sulfonate used as a wetting agent and detergent in the textile, laundry, agricultural spray and paint industry.

Ultroil. A sulfonated vegetable oil used as a wetting agent in the textile industry.

umbellic acid (2, 4-dihydroxycinnamic acid). $(HO)_2C_6H_3CH:CHCOOH$; m.w. 180.06; yel. powd.; s.w.; s.al.

umbelliferone (7-hydrox, coumarin). $C_9H_6O_3$; m.w. 162.05; need.; m.p. 225-7; s.al.

umber. A brown pigment consisting of the hydrated oxides of iron, used in paint-making, the paper trade, and staining; see also sienna.

umbra. A shadow; in physics and astronomy, a region of total shadow, e.g. the dark cone projected from a satellite or planet on the side opposite to the sun, from which region no portion of the sun is visible.

undecanol-2. $C_{11}H_{23}OH$; m.w. 172.30; sp.gr. 0.835; b.p. 225.0.

undecene. See hendecene.

undecenoic acid. See hendecenoic acid.

pri-n-undecyl alcohol. See 1-hendecanol.

n-undecylaldehyde. See hendecanal.

n-undecylamine. See hendecylamine.

n-undecyl cyanide. See lauronitrile.

β-undecylene. See 2-hendecene.

undecylenamide, isobutyl-. A fly spray base which is a synthetic organic insecticide of vegetable origin used to replace a portion of the pyrethrins required in household insecticides.

n-undecylic acid. See hendecanoic acid.

6-undecylenic acid. See 9-hendecenoic acid.

undercooling. See supercooling.

undertone. Color of pigment in a vehicle when spread thinly on white paper or diluted considerably with a white pigment.

unimolecular reaction. See reaction, unimolecular.

Union thinner. Proprietary name for a series of petroleum solvents; b.p. 73.9-197.8.

unit. A specific magnitude of a quantity, set apart by appropriate definition, which is to serve as a basis of comparison or measurement for other quantities of the same nature.

universal motor. Series connected motor having a wound armature, commutator and brush gear which works on either a.c. or d.c.

unsaponifiable matter. Weight of matter extracted by ether from the aqueous alkaline solution after complete saponification of a fat or oil.

unsaturated compound. A compound to which addition of atoms is possible because the maximum valency of the component atoms or total combining power has not been reached, e.g. ethylene, $H_2C{=}CH_2$ and acetylene, $HC{\equiv}CH$.

unsaturated hydrocarbon. A straight chain carbon compound whose valencies are not completely satisfied; see unsaturated compound.

Unyte. A urea formaldehyde resin, thermosetting, available in powder form, colored, translucent or opaque, of good molding and fair machining properties, resistant to alcohols, ketones, esters, hydrocarbons and oils.

upper state. One of two energy levels or states preceding or following a quantum change in which the atom or molecule has the greater electronic energy.

uracil (2,4[1,3]-pyrimidine). NHCONHCOCH:CH; need. f.w.; m.p. 338; s.w.; i.al.

uracil, 5-methyl-. See thymine.

uralite. See hornblende.

uramil (5-aminobarbituric acid; dialuramide; murexan). NHCONHCO-$CH(NH_2)CO$; m.w. 143.06; need.; s.w.

Uramon. A semigranular fertilizer containing 42 per cent urea nitrogen, used in mixed fertilizers where the superphosphate is thoroughly neutralized.

uranate. A salt containing the group $U_2O_7^{=}$, e.g. sodium uranate, $Na_2U_2O_7 \cdot 7H_2O$.

uranic acid (uranyl hydroxide). H_2UO_4; m.w. 304.16; rhomb. or yel. powd.; s.g. 5.92; m.p. $-H_2O$, 250-300; i.w.

uraninite (pitchblende). A term including the minerals cleveite, nivenite and Bröggerite; $UO_3 \cdot UO_3$, PbO, etc.; cub. or amor., gray, br.-blk.; sp.gr. 6.5-9.7; hardness 5.5. Cleveite contains additionally thorium, argon and helium; nivenite, ytterbium; and Bröggerite, thorium.

uranine. $Na_2C_{20}H_{10}O_5$; a yellow crystalline dye obtained by treating fluorescein with sodium carbonate, used in dyeing silk and wool and in detecting the course of subterranean streams.

uranite lime. See autunite.

uranium. U; at. wt. 238.07; at. no. 92; m.p. < 1850° C.; sp.gr. 18.68; valence 4 or 6; a radioactive element.

uranium bromide, tetra-. UBr_4; m.w. 557.80; br. lesf., deliq.; s.g. 4.84; s.w.: i.al.

uranium bromide, tri-. UBr_3; m.w. 477.89; dk. br. need.; s.w.

uranium carbide. UC_2; m.w. 262.14; gray cr.; s.g. 11.28; m.p. 2260; b.p. 4100.

uranium chloride, penta-. UCl_5; m.w. 415.43; dk. grn. need., red by trans. light, deliq.; m.p. d. 120; s. abs. al.

uranium chloride, tetra-. UCl_4; m.w. 379.97; cub. oct. dk. grn., deliq.; s.g. 4.85; s.w.; s.al.

uranium chloride, tri-. UCl_3; m.w. 344.51; need. dk. red, hyg.; s.g. 5.44; s.w.

uranium fluoride, hexa-. UF_6; m.w. 352.14; monocl. col.-pa. yel. deliq.; s.g. $4.68^{20.7}$; m.p. $69.2^{\text{triple pt.}}$; b.p. $56.2^{764.6}$; s.w.

uranium fluoride, tetra-. UF_4; m.w. 314.14; grn. amor. powd.; m.p. ca. 1000; i.w.

uranium iodide, tetra-. UI_4; m.w. 745.82; blk. need.; s.g. 5.6 [15]; m.p. 500; s.w.

uranium nitrate. See uranyl nitrate.

uranium nitride. U_2N_4; m.w. 770.45; yel.

uranium oxide (ous, ic) (pitchblende). U_3O_8; m.w. 842.42; olive grn.; s.g. 7.19-.31; i.w.

uranium oxide, di-. UO_2; m.w. 270.14; rhomb. or cub., br.-blk.; s.g. 10.5; m.p. 2176; i.w.

uranium oxide, per-. $UO_4 \cdot 2H_2O$; m.w. 338.17; pa.-yel. cr., hyg.; m.p. d. 115; i.w.

uranium oxide, tri- (uranyl oxide). UO_3; m.w. 286.14; yel.-red powd.; s.g. 5.92; i.w.

uranium sulfate (ous). $U(SO_4)_2 \cdot 4H_2O$; m.w. 502.32; rhomb. grn.; m.p. $-4H_2O$, 300.

uranium sulfate (ous). $U(SO_4)_2 \cdot 8H_2O$; m.w. 574.38; monocl. grn.; m.p. d. 90; s.w. d.; i.al.

uranium sufide, di-. US_2; m.w. 302.26; tetr. gray-blk.; m.p. > 1100.

uranium sulfide, sesqui-. U_2S_3; m.w. 572.46; gray-blk. need.

uranous. Term applied to compounds in which uranium has a valence of plus four, unstable and easily oxidized to uranyl salts, e.g. UCl_4.

uranyl. Term applied to compounds containing the group UO_2^{++}, e.g. uranyl nitrate, $UO_2(NO_3)_2$.

uranyl acetate. $UO_2(C_2H_3O_2)_2 \cdot 2H_2O$; m.w. 424.22; rhomb. yel.; s.g. 2.893 [15]; m.p. $-H_2O$, 110; b.p. d. 275; s.w.; s.al.

uranyl ammonium carbonate. $UO_2CO_3 \cdot 2(NH_4)_2CO_3 \cdot 2H_2O$; m.w. 558.33; monocl. yel.; s.g. 2.773; m.p. d. 100; s.w.

uranyl benzoate. $UO_2(C_7H_5O_2)_2$; m.w. 512.22; yel. powd.; s.w.; s.al.

uranyl chloride. UO_2Cl_2; m.w. 341.05; yel. deliq.; m.p. < red ht.; s.w.; s.al.

uranyl formate. $UO_2(HCO_2)_2 \cdot H_2O$; m.w. 378.17; oct. yel.; s.g. 3.695 [19]; m.p. $-H_2O$, 110; s.w.

uranyl hydroxide. See uranic acid.

uranyl iodate. $UO_2(IO_3)_2 \cdot H_2O$; m.w 638.00; α prismatic, stable; β pyramidal; s.g. α 5.220^{18}; β 5.052^{16}; s.w

uranyl nitrate. $UO_2(NO_3)_2 \cdot 6H_2O$; m.w 502.25; rhomb. yel., deliq.; s.g. 2.81 m.p. 59; d. 100; b.p. 118; s.w.; s.al. used in photography, medicine, in volumetric analysis.

uranyl oxalate. $UO_2(C_2O_4) \cdot 3H_2O$; m.w 412.19; yel.-cr.; m.p. $-H_2O$, 110; s.w

uranyl oxide. See uranium oxide, tri-.

uranyl phosphate. $UO_2HPO_4 \cdot 4H_2O$ m.w. 438.23; tetr. yel. pl.; i.w.

uranyl potassium carbonate. $UO_2CO_3 \cdot 2K_2CO_3$; m.w. 606.54; hex. yel.; m.p. $-CO_2$, 300; s.w.; i.al.

uranyl potassium sulfate. $UO_2SO_4 \cdot K_2SO_4 \cdot 2H_2O$; m.w. 576.49; monocl. yel.; s.g. $3.363^{19.1}$; m.p. $-2H_2O$, 120; s.w.

uranyl sodium carbonate. $UO_2CO_3 \cdot 2Na_2CO_3$; m.w. 542.13; yel. cr.; s.w.; i.al.

uranyl sulfate. $UO_2SO_4 \cdot 3H_2O$; m.w. 420.25; yel.-grn. cr.; s.g. $3.28^{16.5}$; m.p. d. 100; s.w.; s.al.

uranyl sulfate. $2UO_2SO_4 \cdot 7H_2O$; m.w. 858.51; yel.; m.p. anh. 300; s.w.

uranyl sulfide. UO_2S; m.w. 302.20; br.-blk.; m.p. d. 40-50; s.w.; i. abs. al.

uranyl sulfite. $UO_2SO_3 \cdot 4H_2O$; m.w. 422.26; pa. grn. cr.; i.w.

urao. See trona.

urate. A salt of uric acid (q.v.).

p-uraxine (tetrahydro-sym-tetrazinedione; diurea). NHNHCONHNH-CO; m.w. 116.06; monocl. pr.f.w.; m.p. 270; s.w.; s.al.

urea (carbamide). NH_2CONH_2; m.w. 60.05; col. tetr.; m.p. 132.7; s.w.; s.al.

urea resin. A thermosetting condensation product of urea and formaldehyde which possesses brilliancy and depth of color and is completely resistant to oils and greases.

urea acetic acid. See hydantoic acid.

urea, acetonyl- (1-ureido-2-propanone). $CH_3COCH_2NHCONH_2$; m.w. 116.08; pr.; m.p. −41; b.p. 82; s.w.; s.al.

urea, acetyl-. $CH_3CONHCONH_2$; m.w. 102.06; need. f.w.; m.p. 218-9.

urea, N-acetyl-N'-methyl-. $CH_3CONHCONHCH_3$; m.w. 116.08; col. monocl. f.w.

urea, acetylthio- (N-[thiocarbamyl]acetamide). $CH_3CONHCSNH_2$; m.w. 118.12; pr.f.w.; m.p. 165-6; s.w.; s.al.

urea, allyl- (2-propenyl urea). $C_3H_5NHCONH_2$; m.w. 100.08; need. f.al.; m.p. 85; s.w.; s.al.

urea, N-allyl-N'-phenyl-. $C_3H_5NHCONHC_6H_5$; m.w. 176.11; need. f.bs.; m.p. 115.5.

urea, allylthio- (thiosinamine; 2-propenythiourea; allylsulfocarbamide). $CH_2{:}CHCH_2NHCSNH_2$; m.w. 116.14; col. monocl. or rhomb.; m.p. 78.4; s.al.

urea, amino-. See semicarbazide.

urea-ammonia liquor. A solution of crude urea in ammonia water used for ammoniation of superphosphate in fertilizer manufacture.

urea, benzoylthio- (benzoylthiocarbamide). $C_6H_5CONHCSNH_2$; m.w. 180.14; pr.f.al.; m.p. 171; s.w.; s.al.

urea, benzyl- (benzylcarbamide). $C_6H_5CH_2NHCONH_2$; m.w. 150.09; col.

need. f.al.; m.p. 147-8; s.al.

urea, benzylthio- (benzylthiocarbamide). $C_6H_5CH_2NHCSNH_2$; m.w. 166.15; pr.f.w.; m.p. 162-4; i.w.

urea, n, n-butyl-. $NH_2CONHC_4H_9$; m.w. 116.11; wh. cryst.; m.p. 86.

urea, carbamyl-. See biuret.

urea carboxylic acid, ethyl-. See allophanic acid, ethyl ester.

urea, chloride. See carbamyl chloride.

urea, N, N'-diacetyl- (sym-diacetylurea). $CH_3CONHCONHCOCH_3$; m.w. 144.08; need. f.al.; m.p. 152; s.w.; s.al.

urea, p, p-diaminodiphenyl-thio-, sulfate. $C_{13}H_{14}N_4S \cdot H_2CO_4$; m.w. 356; light cryst. powd.; dye intermediate, diaso component and coupling agent.

urea, N, N'-diethyl- (sym-diethylurea; N, N'-diethylcarbamide). $CO(NHC_2H_5)_2$; m.w. 116.11; col. deliq. need. f.al.; m.p. 112; b.p. 263; s.w.; s.al.

urea, N, N-diethyl- (uns-diethylurea; N, N-diethylcarbamide). $(C_2H_5)_2NCONH_2$; m.w. 116.11; col. deliq. need. f.al.; m.p. 74; s.w.; s.al.

urea, diethyldiphenyl-. $(C_2H_5)_2NCON(C_6H_5)_2$; m.w. 268.18; wh. cryst. powd.; col. liq.; sp.gr. 1.112; b.p. 326-30; m.p. 71.5; plasticizer and stabilizer for cellulose nitrate.

urea, N, N'-diethylthio- (sym-diethylthiourea; N, N'-diethylthiocarbamide). $C_2H_5NHCSNHC_2H_5$; m.w. 132.17; cr.; m.p. 77; s.w.; s.al.

urea, N, N'-dimethyl- (sym-dimethylurea). $CH_3NHCONHCH_3$; m.w. 88.08; col. rhomb. pr.; m.p. 106; b.p. 270; s.w.; s.al.

urea, N, N-dimethyl- (uns-dimethylurea). $(CH_3)_2NCONH_2$; m.w. 88.08; col. monocl. pr.f.me.al.; m.p. 182; s.w.; s.al.

urea, dimethyl phenyl-. See dimethylphenylurea.

urea, sym-diphenyl-. See carbanilide.

urea, N, N'-diphenyl-. See carbanilide.

urea, N, N-diphenyl- (uns-diphenylurea). $(C_6H_5)_2NCONH_2$; m.w. 212.11; col. rhomb. need.; m.p. 189; s.w.; s.al.

urea, N, N-diphenylthio-. $(C_6H_5)_2NCSNH_2$; m.w. 228.17; cr.; sp.gr. 1.3205; m.p. 189; i.w.; s.al.; a flotation agent.

urea, sym-di-o-tolylthio-. See carbanilide, thio-o, o'-dimethyl-.

urea, ditolylthio-. See carbanilide, dimethyl-thio-.

urea, p-ethoxyphenyl-. See urea, p-phenetyl-.

urea, ethyl-. $NH_2CONHC_2H_5$; m.w. 88.08; col. monocl. pr.f.al. tet.; m.p. 92; s.w.; s.al.

urea, ethylene- (dihydro-2[3]-imidazolone). $CH_2NHCONHCH_2$; m.w. 86.06; col. need.; m.p. 131; s.al.

urea, ethylidene- (4-methyl uretidone). $NHCONHCHCH_3$; m.w. 86.06; col. need.; m.p. 154; s.w.; s.al.

urea, N-ethyl-N'-phenyl-. $C_2H_5NHCONHC_6H_5$; m.w. 164.11; need. f.al.; m.p. 99; s.al.

urea, furfurylmalonylthio-. See barbituric acid, 5-(2-fural)-2-thio-.

urea, glycolyl-. See hydantoin.

urea, glycolylthio-. See hydantoin, 2-thio-.

urea, glyoxalyl-. See allanturic acid.

urea, guanyl- (dicyan[o]diamidine; 1-carbamylguanidine). $NH_2C(:NH)NHCONH_2$; m.w. 102.08; pr.f.al.; m.p. 105; s.w.; s.al.

urea, hydroxy- (carbamide oxide). $NH_2CONHOH$; m.w. 76.05; col. need. f.al.; m.p. 128-30; s.w.; s.al.

urea, isoamyl- ([γ-methylbutyl] urea). $C_5H_{11}NHCONH_2$; m.w. 130.13; col. cr.; m.p. 89-91; s.w.

urea, isobutyl- ([β-methylpropyl]-urea). $NH_2CONHCH_2CH(CH_3)_2$; m.w. 116.11; need. f. acet.; m.p. 141.

urea, s-lactyl-. See hydantoin, 5-methyl-.

urea, malo-. See barbital.

urea, malonyl-. See barbitic acid.

urea, mesoxalyl-. See alloxan.

urea, methyl-. $NH_2CONHCH_3$; m.w. 74.06; col. rhomb. pr. f.w. or al.; m.p. 101; s.w.; s.al.

urea, methylthio-. $CH_3NHCSNH_2$; m.w. 90.12; pr.; m.p. 118; s.w.; s.al.

urea, nitro-. $NH_2CONHNO_2$; m.w. 105.05; wh. cr.f.al. or et.; m.p. 155-6; s.w.; s.al.

urea, oxalyl-. See parabanic acid.

urea, oximidomesoxalyl-. See violuric acid.

urea, p-phenetyl- (p-ethoxyphenylurea; dulcin). $C_2H_5OC_6H_4NHCONH_2$; m.w. 180.11; col. leaf. or need. f.dil.a.; m.p. 173-4.

urea, phenyl-. $C_6H_5NHCONH_2$; m.w. 136.08; monocl.; m.p. 147; b.p. 238; s.w.; s.al.

urea, phenylene-. See 2(3)-benzimidazolone.

urea, phenylthio-. $C_6H_5NHCSNH_2$; m.w. 152.14; col. need. f.w. or trim. f.al.; m.p. 154.

urea, 2-propenyl-. See urea, allyl-.

urea, propyl-. $C_3H_7NHCONH_2$; m.w. 102.09; col. cr.; m.p. 107; s.w.

urease. A crystalline ensyme, extracted from jack bean meal by dilute acetone, which splits urea into ammonia and carbon dioxide and is used in the determination of urea in blood and urine.

urea, tartronyl-. See dialuric acid.

urea, tetraethyl-. $(C_2H_5)_2NCON(C_2H_5)_2$; m.w. 172.17; liq.; b.p. 210-5; i.w.

urea, tetramethyl-. $(CH_3)_2NCON(CH_3)_2$; m.w. 116.11; liq.; b.p. 177; s.al.

urea, tetraphenyl- (N, N'-diphenylcarbanilide). $(C_6H_5)_2NCON(C_6H_5)_2$; m.w. 364.17; col. rhomb.; m.p. 183; i.w.; s.al.

urea, thio- (thiocarbamide). NH_2CSNH_2; m.w. 76.11; rhomb. pr.f.al.; m.p. 182; s.w.; s.al.

urea, thio-m-tolyl-. $CH_3C_6H_4NHCSNH_2$; m.w. 167.16; pr.f.al.; m.p. 110-1; s.w.; s.al.

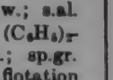
urea, m-tolyl-. $CH_3C_6H_4NHCONH_2$; m.w. 151.10; leaf. f.w.; m.p. 142-3; s.w.; s.al.

urea, o-tolyl-. $CH_3C_6H_4NHCONH_2$; m.w. 151.10; leaf. f.al.; m.p. 190-1; s.al.

urea, p-tolyl-. $CH_3C_6H_4NHCONH_2$; m.w. 151.10; need. f.w.; m.p. 187; s.al.

urea, trimethyl-. $CH_3NHCON(CH_3)_2$; m.w. 102.09; monocl.; m.p. 75.5; b.p. 232.5; s.w.; s.al.

ureide. An acyl derivative of urea, e.g. of acetic acid and urea,



Ureka. Mixture of a base and a mercaptan; yel. powd.; an all purpose accelerator.

Ureka Blend B. Mixture of a base, a salt of a base, and a mercaptan derivative; yel. powd.; a rubber accelerator.

Ureka C. An acyl-thiazole powder; a rubber accelerator.

urethan. See carbamic acid, ethyl ester.

urethan, methyl-. See carbamic acid, methyl ester; carbamic acid, methyl-, ethyl ester.

urethan, phenyl-. See carbanilic acid, ethyl ester.

urethan, thio-. See carbamic acid, thiol-, ethyl ester; carbamic acid, thiono-, ethyl ester.

uretidone, 4-methyl-. See urea ethylidene-.

uric acid (2, 6, 8 [1, 3, 9]-purinetrione; 2, 6, 8-trioxypurine). $C_5H_4N_4O_3$; m.w. 168.08; sc.; i.al.

uric acid, 1-methyl-. $C_6H_6N_4O_3$; m.w. 182.08; col. need.; s.al.

uric acid, 3-methyl-. $C_6H_6N_4O_3$; m.w. 182.08; col. pr.f.w.; s.al.

uric acid, 7-methyl-. $C_6H_6N_4O_3$; m.w. 182.08; col. leaf. f.w.

urotropine. See hexamethylenetetramine.

d-usnic acid (d-usninic acid). $C_{18}H_{16}O_7$; m.w. 344.12; yel. pr.f.al.; m.p. 203; i.w.; s.al.

dl-usnic acid (dl-usninic acid). $C_{18}H_{16}O_7$; m.w. 344.12; yel. monocl. pr.; m.p. 193; i.w.; s.al.

Utilith. A synthetic resin.

utilization, coefficient of. Proportion of generated light from a lamp which reaches the plane of work.

uva ursi (bearberry). The dried leaves of the Arctostaphylos uva ursi used in treating catarrh of the urinary tract.

uvarovite (calcium-chromium garnet). A mineral, $3CaO \cdot Cr_2O_3 \cdot 3SiO_2$; cub., emer. grn.; sp.gr. 3.418-3.81; hardness 6.5-7.5.

Uversol. Proprietary name for a series of metallic soap paint driers.

uvic acid, uvinic acid. See pyrotritaric acid.

uvitic acid (5-methylisophthalic acid). $CH_3C_6H_3(COOH)_2$; m.w. 180.06; col. need. f.w.; m.p. 290; s.w.; s.al.

Uviol glass. Glass highly transparent to ultraviolet rays.

uvitonic acid (6-methyllutidinic acid; 2-picoline-4, 6-dicarboxylic acid). $CH_3C_5H_2N(COOH)_2$; m.w. 181.06; col. cr. powd.; s.w.

V

vaccine. Any substance containing a modified virus, used in preventive inoculation, e.g. cowpox virus inoculated to prevent smallpox. It may include dead or living organisms but it is usually sterilised before use by heat or by means of antiseptics.

vacuum tube (discharge tube). Tube operating at pressures almost those of a vacuum for producing electrical discharges between two electrodes in it.

valency (valence). A number representing the combining power of an atom; the number of electrons lost, gained or shared by an atom involved in chemical reaction; the number of hydrogen atoms with which an atom will combine, or will replace, or react with directly or indirectly, e.g. an oxygen atom combines with two hydrogens, hence has a valence of two, one zinc atom combines with one oxygen atom, hence it has also a valence of two, etc.

valency electrons. The electrons of the outermost electron shell of the atom, or of the highest quantum level, involved (being lost or gained) in chemical reaction.

valentinite. A mineral, Sb_2O_3; rhomb., wh., gray; sp.gr. 5.566; hardness 2.5-3.0.

valeraldehyde (pentanal; n-valeric aldehyde; n-amyl aldehyde). $CH_3(CH_2)_3CHO$; m.w. 86.08; liq.; m.p. −91.5; b.p. 103.4; s.w.; s.al.

valeraldehyde, γ-keto-. See levulinaldehyde.

valeraldehyde, oxime (pentanal oxime). $CH_3(CH_2)_3CH{:}NOH$; m.w. 101.09; cr.; m.p. 52; s.w.; s.al.

valeramide (pentanamide). $CH_3(CH_2)_3CONH_2$; m.w. 101.09; monocl. pl.; m.p. 114-6; s.w.; s.al.

valerian. The dried rhizome and roots of Valerian officinalis; containing starch, a resinous substance and the essential oil of valerian; used in medicine as a sedative to the higher nerve centers.

valeric acid (active). See butyric acid, α-methyl-.

valeric acid (n) (pentanoic acid). $CH_3(CH_2)_3COOH$; m.w. 102.08; col. liq.; m.p. −59; b.p. 187; s.al.

valeric acid, α-amino- (2-aminopentanoic acid). $CH_3CH_2CH_2CH(NH_2)COOH$; m.w. 117.09; leaf. f.w.; s.w.; s.al.

valeric acid, γ-amino- (4-aminopentanoic acid). $CH_3CH(NH_2)CH_2CH_2COOH$; m.w. 117.09; cr.; m.p. 193; s.w.; s.al.

valeric acid, δ-amino- (5-aminopentanoic acid). $NH_2(CH_2)_4COOH$; m.w. 117.09; leaf.; m.p. 157; s.w.; s.al.

valeric acid, α-amino-δ-guanido-. See arginine.

valeric acid, α-amino-β-methyl-. See isoleucine.

valeric acid, amyl ester (amyl valerate; pentyl pentanoate). $C_4H_9COOC_5H_{11}$; m.w. 172.16; col. liq.; m.p. −78.8; b.p. 203.7; s.w.; s.al.

valeric acid, α-bromo- (2-bromopentanoic acid). $CH_3(CH_2)_2CHBrCOOH$; m.w. 180.99; b.p. 67 [10]; s.w.; s.al.

valeric acid, α-bromo-, ethyl ester (ethyl 2-bromopentanoate). $CH_3CH_2CH_2CHBrCOOC_2H_5$; m.w. 209.02; liq.; b.p. 192; i.w.; s.al.

valeric acid, butyl ester (butyl valerate; butyl pentanoate). $CH_3(CH_2)_3COOC_4H_9$; m.w. 158.14; liq.; m.p. −92.8; b.p. 185.6; s.w.; s.al.

valeric acid, α, δ-diamino-. See ornithine.

valeric acid, α-ethyl- (2-ethylpentanoic acid, 3-hexanecarboxylic acid; ethylpropylacetic acid). $CH_3CH_2CH_2CH(C_2H_5)COOH$; m.w. 130.11; col. oil.; b.p. 209.2; i.w.; s.al.

valeric acid, β-ethyl- (3-ethylpentanoic acid; β, β-diethylpropionic acid). $(C_2H_5)_2CHCH_2COOH$; m.w. 130.11; oil.; b.p. 212.

valeric acid, ethyl ester. $CH_3(CH_2)_3COOC_2H_5$; m.w. 130.11; col. liq.; m.p. −91.2; b.p. 145.5; s.al.

valeric acid, 2-furylmethyl ester (furfuryl valerate). $CH_3(CH_2)_3COOCH_2C_4H_3O$; m.w. 182.11; col. liq.; b.p. 228-9 [764]; i.w.; s.al.

valeric acid, α-hydroxy- (2-hydroxypentanoic acid; valerolactic acid). $CH_3CH_2CH_2CHOHCOOH$; m.w. 118.08; hyg. pl.; m.p. 34; s.w.; s.al.

valeric acid, γ-hydroxy-, lactone (4-hydroxypentanoic acid lactone; γ-valerolactone). $CH_3CHCH_2CH_2COO$ (ring); m.w. 100.06; liq.; m.p. −31; b.p. 206-7; s.w.; s.al.

valeric acid, isobutyl ester (isobutyl valerate; β-methylpropyl pentanoate). $CH_3(CH_2)_3COOCH_2CH(CH_3)_2$; m.w. 158.14; col. liq.; b.p. 167; i.w.; s.al.

valeric acid, γ-keto-. See levulinic acid.

valeric acid, α-methyl- (2-methyl pentanoic acid; methylpropylacetic acid). $CH_3(CH_2)_2CH(CH_3)COOH$; m.w. 116.09; col. liq.; b.p. 193.5; s.al.

valeric acid, β-methyl- (3-methylpentanoic acid; sec-butylacetic acid). $C_2H_5CH(CH_3)CH_2COOH$; m.w. 116.09; liq.; b.p. 195.6; s.al.

valeric acid, methyl ester (methyl pentanoate; methyl valerate). $CH_3(CH_2)_3COOCH_3$; m.w. 116.09; col. liq.; m.p. −91.0; b.p. 127.3; s.w.; s.al.

valeric, p-phenylphenacyl ester. $CH_3(CH_2)_3COOCH_2COC_6H_4C_6H_5$; m.w. 296.16; m.p. 63.5.

valeric acid, piperazinium salt. $C_4H_{10}N_2 \cdot 2C_4H_9COOH$; m.w. 290.25; wh.cr.; m.p. 112.5-13; s.w.; s.al.

valeric acid, propyl ester (n-propyl-n-valerate). $CH_3(CH_2)_3COOC_3H_7$; m.w. 144.12; col. liq.; b.p. 167.5; i.w.; s.al.

valeric acid, α, β, γ, δ-tetrahydroxy-. See arabonic acid.

valeric anhydride (pentanoic anhydride). $[CH_3(CH_2)_3CO]_2O$; m.w. 186.14; col. liq.; m.p. −56.1; b.p. 215.

valerolactic acid. See valeric acid, α-hydroxy-.

γ-valerolactone. See valeric acid, γ-hydroxy-, lactone.

valerone. See 4-heptanone, 2, 6-dimethyl-.

valeronitrile (pentanenitrile; n-butyl cyanide). $CH_3(CH_2)_3CH$; m.w. 83.08; col. liq.; m.p. −96.0; b.p. 141; i.w.; s.al.

valerophenone (butyl phenyl ketone). $CH_3(CH_2)_3COC_6H_5$; m.w. 162.11; liq.; b.p. 239.5; i.w.; s.al.

valerophenone, γ-keto- (1-phenyl-1, 4-pentanedione; phenacylacetone; β-acetylpropiophenone; α-acetonylacetophenone). $C_6H_5COCH_2CH_2COCH_3$; m.w. 176.09; yel. oil; s.w.

valeryl chloride (pentanoyl chloride). $CH_3(CH_2)_3COCl$; m.w. 120.53; col. liq.; m.p. −110.0; b.p. 128.

valerylene. See 2-pentyne.

d-valine (α-aminoisovaleric acid). $(CH_3)_2CHCH(NH_2)COOH$; m.w. 117.09; hex. leaf. f.al., pr.f.w.; s.w.; s.al.

dl-valine (dl-α-aminoisovaleric acid; dl-2-amino-3-methyl butanoic acid). $(CH_3)_2CHCH(NH_2)COOH$; m.w. 117.09; monocl. leaf. f.al.; m.p. 298; s.w.

l-valine (l-α-aminoisovaleric acid; l-2-amino-3-methylbutanoic acid). $(CH_3)_2CHCH(NH_2)COOH$; m.w. 117.09; leaf. f.al.

valonia. Acorn cups and beards of the Quercus agilops, rich in tannin and used for tanning.

valylene. Mixture (?); col. liq.; b.p. 50; i.w.; s.al.

Van Dyck red. See iron oxide, red.

Van Dyke brown. Indefinite mixtures of iron oxide and organic matter obtained from bog-earth and natural ochres and used as a pigment.

vanadatometry. Oxidation-reduction volumetric analysis using quinquevalent vanadium.

vanadic. Term applied to compounds in which vanadium has a valence of plus five, e.g. VF_5.

vanadic acid, meta-. HVO_3; m.w. 99.96; yel. sc.; i.w.

vanadic acid, pyro-. $H_4V_2O_7$; m.w. 217.93; amor., br.; i.w.

vanadinite. A mineral, $9PbO \cdot 3V_2O_5 \cdot PbCl_2$; hex., yel., br., or red; sp.gr. 6.7-7.2; hardness 3.

vanadium. V; at. wt. 50.95; cub. lt. gray met.; s.g. 5.866 [15]; m.p. 1715; b.p. 3000; i.w.; used in special steels.

vanadium ammonium sulfate. $VNH_4(SO_4)_2 \cdot 12H_2O$; m.w. 477.30; red to blue; s.g. 1.687; m.p. 49; s.w.

vanadium bromide, tri-. VBr_3; m.w. 290.70; grn. blk. deliq.; s.w.; s.al.

vanadium carbide. VC; m.w. 62.95; gray; s.g. 5.4; m.p. 2830; b.p. 3900; i.w.

vanadium chloride, di-. VCl_2; m.w. 121.86; hex. grn. deliq.; s.g. 3.23 [12]; s.w. d.; s.al.

vanadium chloride, tetra-. VCl_4; m.w. 192.78; red. br. liq.; s.g. 1.816 [20]; m.p. −109; b.p. 148.5 [755]; s.w. d.; s. abs. al.

vanadium chloride, tri-. VCl_3; m.w. 157.32; pink, deliq. cr.; s.g. 3.00 [18]; s.w. d.; s.abs.al.

vanadium fluoride, penta-. VF_5; m.w. 145.95; s.g. 2.177 [15]; b.p. 111.2; s.w.; s.al.

vanadium fluoride, tetra-. VF_4; m.w. 126.95; br. yel.; s.g. 2.975 [23]; m.p. d. 325; s.w.; s.al.

vanadium fluoride, tri-. VF_3; m.w. 107.95; rhomb. grn.; s.g. 3.363 [19]; m.p. >800; i.w.; i.al.

vanadium fluoride, tri-. $VF_3 \cdot 2H_2O$; m.w. 162.00; rhomb.; m.p. $-3H_2O$, 130; s.w.; i.abs.al.

vanadium iodide. $VI_3 \cdot 6H_2O$; m.w. 539.80; grn. cr.; s.al.

vanadium nitride. VN; m.w. 64.96; grn.-br.; s.g. 5.63; m.p. 2050; i.w.

vanadium oxide, di-. V_2O_3; m.w. 133.90; lt. gray cr.; s.g. 3.64; i.w.

vanadium oxide, pent-. V_2O_5; m.w. 181.90; rhomb. yel.-red; s.g. 3.357 [18]; m.p. 690; b.p. d. 1750; s.w.; i.abs.al.

vanadium oxide, tetr-. V_2O_4; m.w. 165.90; bl.cr.; s.g. 4.339; m.p. 1967; i.w.

vanadium oxide, tri-. V_2O_3; m.w. 149.90; blk. cr.; s.g. 4.87 [18]; m.p. 1970; s.w.

vanadium oxydibromide. $VOBr_2$; m.w. 226.78; br., deliq.; m.p. d. 180; s.w.

vanadium oxydichloride. $VOCl_2$; m.w. 137.86; grn., deliq.; s.g. 2.88 [12].

vanadium oxymonochloride. VOCl; m.w. 102.41; br. powd.; s.g. 2.824; b.p. 127; i.w.

vanadium oxymonochloride, di-. V_2O_3Cl; m.w. 169.36; yel. cr.; s.g. 3.64; i.w.

vanadium oxytribromide. $VOBr_3$; m.w. 306.70; red. liq.; s.g. 2.933 [14.5]; m.p. d. 180; b.p. 130 [20]; s.w.

vanadium oxytrichloride. $VOCl_3$; m.w. 173.32; yel. liq., deliq.; s.g. 1.829; m.p. < −15; b.p. 127.19; s.w. d.; s.al.

vanadium silicide. VSi_2; m.w. 107.07; met., prisms; s.g. 4.42; i.w.; i.al.

vanadium silicide. V_3Si; m.w. 129.96; silv. wh. pr.; s.g. 5.48 [17]; i.w.; i.al.

vanadium sulfate (hypovanadous sulfate). $VSO_4 \cdot 7H_2O$; m.w. 273.12; monocl. vlt.

vanadium sulfide, di-. V_2S_2; m.w. 166.02; blk., pl.; s.g. 4.20.

vanadium sulfide, penta-. V_2S_5; m.w. 262.20; blk.-grn. powd.; s.g. 3.00; i.w.

vanadium sulfide, tri-. V_2S_3; m.w. 198.08; grn.-blk. pl. or powd.; s.g. 4.7 [21]; i.w.

vanadyl sulfate. $(VO)(SO_4)$; m.w. 163.01; bl.; s.w.

vanadyl sulfate. $(VO)_2(SO_4)_3$; m.w. 422.08; blue, deliq.; s.w.; s.al.

Vandex. Selenium.

vanillaldehyde. See vanillin.

vanillic acid (4-hydroxy-3-methoxybenzoic acid). $CH_3O(HO)C_6H_3COOH$; m.w. 168.06; col. need. f.w.; m.p. 207; s.al.

vanillic acid, ethyl ester. $HO(CH_3O)C_6H_3COOC_2H_5$; m.w. 196.09; col. need.; m.p. 44; b.p. 293; i.w.; s.al.

vanillin (vanillaldehyde; 4-hydroxy-3-methoxybenzaldehyde; protocatechualdehyde 3-methyl ether). $CH_3O(OH)C_6H_3CHO$; m.w. 152.06; col. monocl. need. f.w.; m.p. 81-2; b.p. 285; s.al.

vanillin, acetate (4-acetoxy-3-methoxybenzaldehyde; acetylvanillin). $CH_3O(CH_3COO)C_6H_3CHO$; m.w. 194.06; col. need.; m.p. 77; s.w.; s.al.

vanillin, acetyl-. See vanillin, acetate.

vanillin, 5-bromo- (5-bromo-4-hydroxy-3-methoxybenzaldehyde). $CH_3O(OH)BrC_6H_2CHO$; m.w. 230.97; col. leaf.; m.p. 164; i.w.; s.al.

vanillin, 5-chloro- (5-chloro-4-hydroxy-3-methoxybenzaldehyde). $CH_3O(OH)ClC_6H_2CHO$; m.w. 186.51; col. pl.; m.p. 164-5; i.w.; s.al.

vanillin, ethyl ether. See benzaldehyde, 4-ethoxy-3-methoxy-.

vanillyl alcohol (4-hydroxy-3-methoxybenzyl alcohol; vanillic alcohol). $CH_3O(HO)C_6H_3CH_2OH$; m.w. 154.08; col. need. f.w. or bz.; m.p. 115; s.w.; s.al.

vanner. A machine used for concentrating fine sands and slimes.

van't Hoff, law of. When the temperature of a system in equilibrium is raised, the equilibrium point is displaced in the direction which absorbs heat.

van't Hoff factor. Factor, the product of which, with molecular weight of an

electrolyte calculated from freezing point law, gives its real molecular weight.

vapor curing. See curing, vapor.

vapor density. The ratio of the mass of a given volume of a substance in the vapor state to the same volume of air or oxygen.

vapor pressure. The pressure exerted at any temperature by a vapor existing in equilibrium with its liquid or solid phase.

variables of state. Variables which determine physical state of a body, i.e. pressure, volume, temperature and entropy.

variance. Number of degrees of freedom of a system.

variscite. A mineral, $AlPO_4 \cdot 2H_2O$; rhomb., grn.; sp.gr. 2.47-2.54; hardness 4.

varnish gum. Gum that is added to varnish to give the hardening properties to the varnish. All the true varnish resins are commercially called "gums."

varnish, lithographic. Linseed oil that has been heat bodied without driers.

varnish, spirit. A solution of resin in volatile solvents, usually made without heating.

Varsol. A petroleum solvent; b.p. 148.9-210.

Vaseline. See petrolatum.

vasicine. $C_{11}H_{12}N_2O$; m.w. 188.11; need. s.w.; s.al.

vat dye. A dyestuff insoluble in water but soluble in alkaline solution when reduced with suitable agents, e.g. the insoluble indigo blue is converted to soluble indigo white upon reduction. The latter is applied to the cloth and oxidized by exposure to air to the original insoluble blue form.

Vatrolite. See Lykopon.

Vatsol OS. Sodium salt of alkylated naphthalene sulfonate.

Vatsol OT. Sodium Salt of an alkyl ester of sulfosuccinic acid.

vector. Value which is completely determined by its magnitude and an associated direction in space, e.g. velocity, stress.

vector, axial. See axial vector.

vector, polar. See polar vector.

vector polygon. The force polygon for a set of forces whose resultant equals zero.

vector product. Vector having magnitude equal to product of magnitudes of the factors and sine of angle between the direction of the two vectors and a direction perpendicular to their common plane.

Vegard-Kaplan bands. Spectral bands caused by metastable nitrogen molecules.

Vegard law. When two similar crystalline materials form a solid solution, the lattice constant of this solution divides the space between their respective lattice constants in ratio to their relative quantities.

vegetable albumin. A protein found in plants, albumin usually being found in the seeds of the plants.

vegetable casein. See legumin.

vegetable fatty acid. Fatty acid obtained from naturally occurring fats in plants, e.g. palmitic acid from palm oil.

vegetable parchment. A paper having a layer of semi-transparent gelatinous amyloid or cellulose hydrate and resembling natural parchment, made by immersing unsized paper in 75 to 84% sulfuric acid for a short period and washing immediately.

vegetable pepsin. See papain.

vegetable pitch. See pitch, vegetable.

vegetable sulfur. See lycopodium.

vegetable wax (Japan wax). A tree wax obtained from the East which is not a true wax but a glyceride and contains palmitin and free palmitic acid, used in making soap, wax matches and furniture polish.

vehicle. Liquid carrier for pigments in paints, which dries to form a film, e.g. linseed oil.

Velan PF. A quaternary ammonium compound with a pyridine nucleus.

velocity. Time rate of motion in a given direction.

velocity ratio. Ratio of the distance thru which force is applied to the distance thru which resistance is overcome.

velocity, space. See space velocity.

Velvetex. A gas carbon black.

Venetian red. See iron oxide, red.

Venice turpentine. See turpentine, Venice.

Venturi meter. Device for computing velocity of flow in a pipe from difference in pressure in the pipe and a constriction therein.

veratraldehyde (3, 4-dimethoxybenzaldehyde; protocatechualdehyde dimethyl ether; 3, 4-dimethoxybenzenecarbonal). $(CH_3O)_2C_6H_3CHO$; m.w. 166.08; col. need. f.et.; m.p. 42-3; b.p. 283; s.w.; s.al.

veratric acid (3, 4-dimethoxybenzoic acid; protocatechuic acid dimethyl ethyl). $(CH_3O)_2C_6H_3COOH$; m.w. 182.08; cr.f.w.; m.p. anh. 181; s.al.

veratrine (crystalline) (cevadine). $C_{32}H_{49}NO_9$; m.w. 591.39; col. cr.f.al.; s.al.

veratrole (1, 2-dimethoxybenzene; pyrocatechol dimethyl ether). $C_6H_4(OCH_3)_2$; m.w. 138.08; col. cr.; m.p. 22.5; b.p. 206-7; s.w.; s.al.

veratrole, 4-allyl- (eugenol methyl ether; methyleugenol). $CH_2{:}CHCH_2C_6H_3(OCH_3)_2$; m.w. 178.11; col. liq.; b.p. 248-9; i.w.; s.al.

veratrole, 4-propenyl- (isoeugenol methyl ether). $CH_3CH{:}CHC_6H_3(OCH_3)_2$; m.w. 178.11; col. liq.; b.p. 262-4; i.w.; s.al.

veratrum. The dried rhizome and roots of Veratrum viride; poisonous substance used in medicine because of its action on the heart.

verbena oil, East Indian. See oil lemon grass.

verd-antique. See serpentine.

Verdet constant. Specific magnetic rotatory power.

verdigris. Basic acetates of copper.

vergency. Reciprocal of distance from lens or reflector to focus of rays.

vermiform. Worm shaped.

vermilion. Artificial cinnabar or red mercuric sulfide, HgS, used as a paint, rubber and plastics pigment.

vermilion, American. A red pigment containing an organic dye, lead oxide and barium sulfate.

vermilion natural. See cinnabar.

vernier. A movable auxiliary scale for reading fractions of the distance between the two smallest divisions of a scale.

veronal. See barbital.

versor. Factor of a vector that determines the latter's geometrical direction. Its product with the tensor equals the vector.

verte emeraude. See Guignet green.

vertivert. See vetiver oil.

vesuvianite (idocrase). A mineral, $Ca_6[Al(OH,F)]Al_2(SiO_4)_5$; tetr., yel., grn., br., rar. bl., red, blk.; sp.gr. 3.35-3.45; hardness 6.5.

vetiver oil. See oil, vetiver.

vibration rotation-spectra. Molecular spectra occurring in the near infra-red region of spectrum.

l-vicine. $C_{10}H_{16}O_7N_4$; m.w. 304.16; need.; m.p. 242; s.w.; i.al.

Victron. A polystyrene resin, thermoplastic, available in powder, sheet, and lacquer forms, of excellent machining qualities, good resistance to acids, alkalies and alcohols, and excellent resistance to oils.

vietinghofite. See samarskite.

Vigorith. A synthetic tar-acid resin.

Villari reversal. Change in sign of the Joule effect with increasing magnetism.

villiaumite. A mineral, NaF; cub.; sp.gr. 2.79; hardness 3.5.

vinaconic acid (1, 1-cyclopropanedicarboxylic acid; ethylenemalonic acid). $CH_2CH_2C(COOH)_2$; m.w. 130.05; tricl. need. f.et.; m.p. 175; b.p. 210 ^{30}; s.w.; s.al.

Vinal. A synthetic vinyl resin.

vinasse. The residue left after fermentation of beet molasses, containing mineral salts; used as a fertilizer and cattle food.

vine black. A black material obtained by incomplete combustion of grapevines used in artist's colors and copper plate printing.

vinegar. Dilute impure preparations of acetic acid, containing a minimum of 4%; made by fermentation of alcoholic liquids.

vinegar, wood. See pyroligneous acid.

vinetine. See oxyacanthine.

Vinnapas. A synthetic tar-acid resin.

Vinsol. The black residue left after rosin is extracted with petroleum solvents; m.p. 115; used in insulating and dark coatings.

vinyl resin. The product obtained by polymerization of vinyl acetate, chloride, mixtures of the two, or of vinyl chloroacetate.

vinyl acetate. See 3-butenoic acid.

vinyl acetate, polymerized (polyvinyl acetate). Vinyl acetate polymerized by heating in the presence of a peroxide catalyst, made into lacquers, adhesives, impregnating textiles, or molded plastics.

vinyl alcohol (ethenol). $CH_2{:}CHOH$; m.w. 44.03; a compound occurring in commercial ether which has not been isolated.

vinylamine (ethenylamine). $CH_2{:}CHNH_2$; m.w. 43.05; liq.; b.p. 56; s.w.; s.al.

vinyl bromide (bromoethane; bromoethylene). $CH_2{:}CHBr$; m.w. 106.94; liq.; m.p. −137.8; b.p. 15.8; i.w.; s.al.

vinyl chloride (chloroethylene; chloroethene). $CH_2{:}CHCl$; m.w. 62.48; gas; m.p. −159.7; b.p. −13.9; s.w.; s.al.

vinyl cyanide. See acrylonitrile.

vinyl ether (ethenyloxyethene; divinyl ether). $(CH_2{:}CH)_2O$; m.w. 70.05; col. liq.; b.p. 39; i.w.; s.al.

vinyl iodide (iodoethylene; iodoethene). $CH_2{:}CHI$; m.w. 153.94; liq.; b.p. 56; i.w.; s.al.

Vinylite. A filled vinyl polymer resin, thermoplastic, available in colored, translucent or opaque forms, of excellent molding and machining quality, and excellent resistance to oils and aliphatic hydrocarbons.

Vinylite A. A polymerized vinyl acetate resin.

Vinylite Q. A polymerized vinyl chloride resin.

Vinylite V. A copolymer of vinyl acetate and chloride resin.

Vinylite X. An aldehyde reaction resin.

vinyl resin. A thermoplastic polyvinyl alcohol derivatives, e.g. Vinylite.

vinyl sulfide (ethenylthioethene; divinyl sulfide). $(CH_2{:}CH)_2S$; m.w. 86.11; oil; b.p. 101; s.w.; s.al.

vinyl tribromide. See ethane, 1, 1, 2-tribromo-.

vinyl trichloride. See ethane, 1, 1, 2-trichloro-.

Vinyloid. A synthetic vinyl resin.

Vinylseal. A synthetic vinyl resin.

violuric acid (alloxan 5-oxime; 5-isonitrosobarbituric acid; oximidomesoxalylurea). $CONHCONHCOC{:}NOH$; m.w. 157.05; rhomb.; m.p. $-H_2O$ 100; s.w.; s.al.

viosterol. See vitamin D.

Viridian. See Guignet green.

virginium. Vi; at. wt. about 224; at. no. 87; valence 1; discovered by Allison by magneto-optic analysis of pollucite and lepidolite.

virtual work, principle of. If a system in equilibrium be imagined to undergo any infinitely small displacement, consistent with the geometrical conditions of the system, the work done by the forces acting on the system equals zero.

virus. A toxic chemical agent produced by living organisms such as bacteria, and producing the symptoms of disease; any disease-producing agent.

viscometer. See viscosimeter.

viscose. A syrupy, highly viscous, colloidal solution consisting of cellulose xanthate and dilute caustic soda.

viscose rayon. See rayon, viscose.

viscosimeter (viscometer). A device for measuring the viscosity or resistance to flow.

viscosity. Internal friction of a liquid because of its resistance to shear, agitation or flow.

viscosity index. Variation of viscosity compared to any Pennsylvania oil taken as 100 or an asphaltic oil as zero.

viscosity range. Ratio of viscosity at lowest temperature to that at highest temperature.

viscosity, reciprocal. See reciprocal viscosity.

viscosity, Saybolt. See Saybolt viscosity.

viscosity, specific. See specific viscosity.

viscosity, structural. Type of viscous flow where rate of flow is not proportional to applied pressure.

visibility. The ratio of the luminous flux in lumens to the total radiant energy in ergs per second or in watts.

Vispronal. See Vistanex.

Vistanex. A polymerized saturated hydrocarbon having properties intermediate between rubber and nonelastic plastics.

Vistanex polybutene. High-molecular-weight rubbery hydrocarbons for rubber compounding, electrical insulating and wax plasticizing.

vitamin. A chemical substance, originating in plant sources except for vitamin D, occurring in minute quantities in food-stuffs and which is essential for the proper maintenance of health and vigor of the animal or human organism.

vitamin A. $C_{20}H_{29}OH$; a vitamin which stimulates growth and increases resistance against infection and disease, especially the eye disease xerolphthalmia; found most abundantly in butter, raw carrots and cod liver oil. In carrots it exists in the form of carotene, convertible by the body to vitamin A.

vitamin B_1 (thiamin). $C_{12}H_{17}OSN_4Cl$; the antineuritic vitamin, a deficiency of which causes polyneuritis and beriberi, a compound of aminopyrimidine sulfonic acid and methylthiazole carboxylic acid; soluble in water and destroyed by heat. Excellent sources are yeast, corn, whole wheat, oats, and the outer coats of rice.

vitamin B_2 (riboflavin, vitamin G, lactoflavin, ovoflavin). $C_{17}H_{20}N_4O_6$; 6, 7-dimethyl-9-(1′-d-ribityl)-isoalloxazine; orange-yel. cryst. powd.; decomposes at 280° C.; the vitamin, a deficiency of which results in pellagra.

vitamin C. See l-ascorbic acid.

vitamin D (calciferol). $C_{28}H_{43}OH$; a vitamin whose deficiency in the diet causes rickets. It can be produced by the irradiation of ergosterol or viosterol as in the body when sunlight falls upon the skin; colorless crystals; m.p. 114.5-117; soluble in fats. Cod liver oil and egg yolk are excellent sources of this vitamin.

vitamin E (tocopherol). 2-methyl-2-hexadecyl-6-hydroxy-5, 7, 8-trimethylchromane; distills at 102-105° at 10^{-4} mm.; soluble in fat solvents; deficiency of the vitamin in diet of rats causes sterility after several generations; occurs in green vegetables, wheat-germ and cottonseed oils; made synthetically from phytol, an alcohol occurring in chlorophyll and trimethylhydroquinone.

vitamin G. See vitamin B_2.

vitamin PP. See nicotinic acid.

vitamin, fat soluble. The vitamins A, D, and E, soluble in fat.

vitamin, water soluble. Vitamins B_1, B_2 and C.

Vitreosil. Pure fused silica, heat and acid proof, used in laboratory ware.

vitrification range. The temperature interval between the beginning of fusion and loss of form produced by melting.

vitriol, oil of. See sulfuric acid.

vivianite (blue iron ore). A mineral, $Fe_3(PO_4)_2 \cdot 8H_2O$; monocl., col. tabl. or blsh.grn. on expose.; sp.gr. 2.58-2.693; hardness 1.5-2.0.

V. M. & P. naphtha. A petroleum solvent; b.p. 93.3-162.0° C.

volatile fatty acids. Fatty acids resulting from hydrolysis of an oil or fat which is volatile with steam; the lower fatty acids up to and including capric acid.

volatile oil. See oil, essential.

volcanic ash. A sedimentary rock composed of volcanic dust, ashes, and cinders used as an abrasive.

Volclay. See Bentonite.

volt. An electrical unit of potential based on the International ampere and ohm, and equal to the product of one ampere and one ohm.

volt, absolute. Electrical unit of potential equal to .0033356 e.s.u. and 1×10^8 e.m.u.

volt-second. A unit of magnetic flux equal to 1×10^8 maxwells.

Volta law. The contact potential difference of two conductors is identical even tho joined by intervening conductors.

voltage. Term applied to a difference of potential.

voltage, breakdown. The minimum voltage that will permit a disruptive discharge.

voltaic couple. Two different metals in contact with each other producing a contact potential difference.

voltmeter. A device used for measuring the drop of potential between two points; essentially a galvanometer with a standard resistance in series with it.

voltolization. Treatment with a silent electrical discharge.

volume, atomic. See atomic volume.

volume, critical. See critical volume.

volume, mol. See mol volume.

volume, molecular. See mol volume.

volume resistance. The ratio of the applied voltage to the current which flows thru the volume of the insulating material.

volume resistivity. The resistance between two electrodes which cover opposite faces of a cubic centimeter provided the resistance of the surface layer is so high that it is not responsible for any appreciable part of the current.

volume, saturated. See saturated volume.

volume, specific. See specific volume.

volumetric analysis. The methods of quantitative analysis using reagents of definite strength in well-understood chemical reactions and also using the suitable measuring instruments of volumes of liquids such as the burette and pipette.

vomit nut. See nux vomica.

vorticity. The rotational motion of a fluid which equals twice the angular velocity of rotation.

Vulcanex. An aniline acetaldehyde formaldehyde rubber accelerator.

vulcanism. All movements of lava and their attendant phenomena.

vulcanization (cure). A process of treating rubber by introducing sulfur which penetrates between the double valency bonds; in small proportions it increases elasticity, durability of rubber and its resistance to rupture and abrasion, in larger proportions hardness and brittleness result.

vulcanization assistant. Inorganic materials that aid vulcanization, e.g. lead oxide.

vulcanization, coefficient of. Combined sulfur as a percentage of the rubber.

vulcanized fiber. A product made by the action of zinc chloride on cellulose which is very resistant to chemical action.

vulcanizing accelerator. Ingredient added to rubber to hasten vulcanization, e.g. diphenyl guanidine.

Vulcone. Ethylidene aniline formaldehyde rubber accelerator.

W

Wachenroder's solution. A mixture of polythionic acids, produced by passing hydrogen sulfide into a solution of sulfurous acid.

Wackerschellack. A synthetic tar-acid resin.

wagnerite. A mineral, $Mg_2P_2O_8MgF_2$; monocl., col., yel., grayish, grnsh., redsh.; sp.gr. 2.985-3.14; hardness 5.0-5.5.

Walden inversion. A molecular rearrangement in which an asymmetric carbon atom undergoes an optical inversion or reversal of configuration during the replacement of one radical by another.

Walden law. At infinite dilution, the limiting equivalent conductance of a solution varies inversely with viscosity coefficient of solvent, the constant being identical for all solvents.

walnut oil. See oil, walnut.

Warcosol. A sodium alkyl naphthalene sulfonate.

warp. The threads which run lengthwise in a woven fabric.

wash-bottle. A flask, fitted with a two-hole rubber stopper with two glass tubes, which delivers water in a thin stream by blowing; used in the chemical laboratory.

washing soda. See sodium carbonate, $Na_2CO_3 \cdot 10H_2O$.

water. H_2O; m.w. 18.02; col. liq. or hex. col. cr.; s.g. lq. 1.0004, s. 0.9168 °; m.p. 0; b.p. 100; s.al.

water-absorption. Amount of water taken up by a substance when exposed to humid conditions or when immersed.

water-binding. The attracting and holding of water, with great force, by colloidal particles.

water equivalent. Mass of water which would require the same quantity of heat to raise its temperature 1° C. as is required by the apparatus (calorimeter, thermometer, etc.) for this purpose.

water gas. A combustible gas rich in hydrogen and carbon monoxide produced by blowing steam over coke.

water gas, carburetted. An illuminating gas containing chiefly carbon monoxide, hydrogen, and illuminants.

water-gas tar. Tar produced in the manufacture of carbureted water gas by the decomposition of petroleum oil by heat in the presence of flue gas.

water glass. See sodium silicate, di-.

water-in-oil emulsion. See emulsion, water-in-oil.

Waterlite. A synthetic tar-acid plastic.

water of hydration. The definite amount of water with which some substances loosely combine when they separate from a solution as crystals, e.g. calcium chloride, $CaCl_2 \cdot 6H_2O$.

water of plasticity. Water necessary to bring a ceramic clay to a good working consistency.

water-proofing compound. A chemical whose presence in or on a fibrous material modifies the surface tension between the water and the substance of the fiber, e.g. rubber dissolved in various solvents and the formation of an aluminum soap on a fiber.

water, shrinkage. See shrinkage water.

water softener. Chemical used in treating water to remove the soap precipitating metals, calcium and magnesium, e.g. Doucil, Permutit, Sofnol, sodium carbonate.

water softening. See water softener.

water soluble oil. See oil, water soluble.

water table (ground water surface). Highest level below which the rocks are saturated with water.

water vapor pressure. The component of atmospheric pressure caused by the presence of water vapor, usually expressed in inches or millimeters of mercury.

watt. The power developed by a current of one ampere in flowing thru a conductor with a potential difference of one volt; numerically equal to amperes times volts.

watt-hour. Measure of work and energy equal to watts times hours.

wattle. Bark from the Australian wattles, containing 25 to 45% tannin, used in tanning industry.

wattle bark. See wattle.

wave function (ψ). Point function denoting amplitude of a wave variable at any point traversed by waves.

wave guide. Small cross section dielectric for transmitting electromagnetic waves.

wave length. Distance between two heads, or troughs, of a wave.

wave mechanics. An aspect of the subject of quantum mechanics treating of waves and of electrons in their paths as wave functions.

wave motion. Progressive disturbance propagated in a medium by periodic vibration of its particles.

wave number. Rate of vibration of ultraviolet and light rays expressed in terms of the number of complete oscillations made in traveling a distance of one centimeter; the reciprocal of wave length.

wavellite. A mineral, $4AlPO_4 \cdot 2Al(OH)_3 \cdot 9H_2O$; rhomb., col., gray, yel., grn., bl., blk.; sp.gr. 2.316-2.356; hardness 3.5-4.0.

wax. Any ester of a higher fatty acid with alcohols of the sterol or C_{16}—C_{36} members of the methyl alcohol series. Natural waxes are mixtures of the above with smaller amounts of uncombined alcohols, acids and hydrocarbons—all of high molecular weight, e.g. carnauba wax.

wax, bayberry (myrtle wax). A green wax obtained from Myrica shrubs consisting of palmitic acid and palmitin; sp.gr. 0.875-0.995; m.p. 40-48; s.al.; used in making candles, soaps, in the polishing of leather and in medicine.

wax, bees-. A mixture of crude cerotic acid and myricin; wh. to yel. amor. solid; sp.gr. 0.965-0.969; m.p. 63-4; s.al.; used in wax polishes, transparent papers, cosmetics, lithographic ink, in medicine.

wax, Brazil. See wax, carnauba.

wax, candelilla. Yel. br. amorp. solid; sp.gr. 0.983; m.p. 67-68; used in shoe polishes, sealing wax; a soft wax stiffener and substitute for carnauba and beeswax.

wax, carnauba (Brazil wax). A yellow lumpy wax obtained from the South American pine; sp.gr. 0.995; m.p. 84-86; s.al.; used in polishes; for waterproofing and hardening candles; and as a substitute for beeswax.

wax, ceresin. A white to yellow refined ozokerite; sp.gr. 0.92-0.94; m.p. 68-72; s.al.; used in polishes, antifouling paints, waxed paper, bottles for hydrofluoric acid, salves and as a general size.

wax, Chinese. A white to yellow secretion of an insect inhabiting ash trees; sp.gr. 0.970; m.p. 81; s.al.; used in candles and polishes and in treating silk and cotton fabrics.

wax, Chinese insect. A wax derived from certain insects, consisting chiefly of ceryl cerotate; $C_{26}H_{53} \cdot C_{26}H_{51}O_2$, and used in China and Japan for making candles and for polishing furniture and leather.

wax distillate. Portion that follows gas-oil fraction in petroleum distillation.

wax, fossil. See wax, ozokerite.

wax, Japan (Japanese tallow, sumac wax). A pale yellow solid derived from a species of Rhus; sp.gr. 0.97-0.98; m.p. 53; used in candles, polishes, soaps.

wax, Lanette. See Lanette wax.

wax, lignite. See wax, montan.

wax, mineral. See wax, ozokerite.

wax, montan (lignite wax). Dark brown to white lumps derived from lignite coal; m.p. 80-90; used as a substitute for carnauba and beeswax in paper sizing, polishes, paints, candles, soaps, pastes.

wax, myrtle. See wax, bayberry.

wax, ozokerite (mineral wax). A mixture of hydrocarbons; yel. br. to black or green amor. mass; sp.gr. 0.85-0.95; m.p. 55-110; used in making paints, wood fillers, polishes, ointments, crayons, lubricants, as a substitute for beeswax, carnauba, ceresin.

wax, palm. A yellow amorphous wax; sp.gr. 0.992-0.995; m.p. 102-105; s.al.; used in making candles, polishes, phonograph records and as a substitute for beeswax; see also wax, carnauba.

wax, paraffin. See paraffin wax.

wax, scale. See scale wax.

wax, slack. See slack wax.

wax, spermaceti. A pearly-white amorphous wax, largely cetyl palmitate; obtained from the sperm whale; sp.gr. 0.945; m.p. 45; s.al.; used in the manufacture of chemical emulsions, cerates, soaps, sweetmeats, ointments, toilet preparations.

wax, sugar cane. See sugar cane wax.

wax, sumac. See wax, Japan.

wax tailings. A yellow sticky semi-asphalt product obtained in the destructive distillation of petroleum tar just before the formation of the coke; used in paving mixtures, cheap axle greases and water-proofing compounds.

wax, vegetable. See vegetable wax.

wax, wool. See wool wax.

weak acid. See acid, weak.

weak base. See base, weak.

weber. A unit of magnetic flux; the amount of magnetic flux which, when linked at a uniform rate with a single-turn electric circuit during an interval of one second, will induce in this circuit an e.m.f. of one volt.

websterite. See aluminite.

weft. See filling threads.

Wegscheider's principle. Ratio of two products of a process is constant and equal to the ratio of the velocity constants; a characteristic of side-reactions.

weight. Force with which a body is attracted toward the earth measured in units of mass, i.e. grams and pounds.

weight, commercial. The oven-dry weight of a textile material plus the weight corresponding to its commercial moisture regain.

weight, molecular. See molecular weight.

weight, oven-dry. The weight of a textile material determined after drying by definite prescribed methods.

Wenjazit. A synthetic tar-acid resin.

wernerite. See scapoline.

Wertheim effect (Wiedemann effect). Difference in helical magnetization of a wire or rod subjected to twisting.

Westphal balance. Balance for determining specific gravities of liquids by comparing the loss of weight of a bob in water and that in the given media, the ratio of the losses of weight is equal to the specific gravity of the liquid.

Weston cell. A standard cell having mercury as the anode, cadmium as the cathode, cadmium sulfate solution as the electrolyte and mercurous sulfate as a depolariser, used in potentiometers.

wet bulb temperature. See temperature, wet bulb.

Wetanol. A modified sulfated fatty acid ester used as a wetting agent in the textile, cosmetic, paper and leather industries.

wettable sulfur. See sulfur, wettable.

wetter. See wetting agent.

wetting agent. A preparation used in spraying fluids and emulsifiers to facilitate their spreading, e.g. Mercerol in the mercerization of cotton fibers.

wetting, degree of. Degree of wetting of a solid by a liquid is the change in free surface energy which occurs when unit area of a solid comes into contact with a specific liquid.

wetting-out. Ability of a liquid to enter and displace air from capillary spaces.

whale oil. See oil, whale.

Whatman extraction thimble. A specially prepared seamless filter-paper which can be used repeatedly for the extraction of soaps, fats, foods, and rubber.

wheat oil. See oil, wheat.

Wheatstone bridge. Electrical branched circuit used in measuring resistances by a balancing of currents.

wheel ore. See bournonite.

whewellite. A mineral, $CaC_2O_4 \cdot H_2O$; monocl., col.; sp.gr. 2.23; hardness 2.5.

whey. The liquid residue remaining in the making of skim-milk and cheese.

white bole. See clay.

white gold. An alloy of gold (75-85%), nickel (8-10%), and zinc (2-9%); also referring to palladium gold and platinum gold (60% Au, 40% Pt).

white iron pyrites. See marcasite.

white lead. See lead carbonate, basic.

white lead ore. See cerussite.

white metal. A term applied to bearing

or anti-friction metals which are alloys of tin, antimony, and lead or copper, e.g. Babbitt metal.

white mica. See muscovite.

white oil. See oil, white.

white oil, medicinal. See oil, white, medicinal.

white spirit. An English term for turpentine substitutes.

white spirits. See petroleum spirits.

whitewash. See milk of lime.

whiting. A very fine preparation of chalk obtained from the chalk cliffs in England; applied also to pulverized limestone; used in polishes and scouring materials, putty, and in rubber and oilcloth industry.

Wiedemann and Franz law. Ratio of the thermal and electrical conductivities, at a particular temperature, is the same for all metals and equals 5.345×10^{-6} cal. ohm/sec. deg.^{2}

Wiedemann effect. See Wertheim effect.

Wiedemann law. Molar susceptibility of a solute in a solvent is independent of its concentration.

Wien displacement law. When the temperature of a radiating black body increases, the wave length corresponding to maximum energy decreases in such a way that the product of the absolute temperature and wave length is constant.

Wien effect. The equivalent conductance of solutions under high potentials increases more than can be explained by the heating effect as the applied potential increases.

Wijs' number. A number indicating the degree of unsaturation of a compound similar to the Hübl number, both being an iodine value and obtained with iodine monochloride and subsequent titration.

wild tobacco. See lobelia.

Wilhelmy's law. The velocity of a chemical reaction at any instant is proportional to the concentrations of the reacting substances.

willemite. A mineral, Zn_2SiO_4; hex. (trig.-rhbdr.), wh. or grn. yel.-redsh.-br.; sp.gr. 3.84-4.19; hardness 5.5. *Troostite* is a variety containing manganese.

Williamson synthesis. A general reaction for uniting hydrocarbon radicals by the ether linkage, e.g. refluxing an alcoholic solution of sodium ethoxide with ethyl iodide to form ethyl ether.

wilt. See blight.

wind break. Irregularities formed on coated surfaces by air currents, while drying.

wine lees. See argols.

winestones oil. See oil, grape seed.

winter bloom. See hamamelis.

wintergreen oil. See salicylic acid, methyl ester.

witch-hazel. See hamamelis.

witch-hazel extract. An alcoholic extract of hamamelis used in medicine, toilet preparations and pharmacy.

witherite. A mineral, $BaO \cdot CO_2$; rhomb., col., grayish wh. or yelsh.; sp.gr. 4.28-4.35; hardness 3.0-3.75.

woad. A blue coloring matter obtained from the leaves of the woad plant, Isatis tinctoria, containing indican and being chemically identical with indigo.

wolframite (peanut ore). A mineral, $(Fe,Mn)WO_4$; monocl., dk. gray or brnsh. blk.; sp.gr. 7.14-7.54; hardness 5.0-5.5; a source of tungsten.

wollastonite (tabular spar). A mineral, $CaSiO_3$; monocl., wh.-gray, yel., red or br.; sp.gr. 2.80-2.92; hardness 4.5-5.0.

wood alcohol. See methanol.

wood, Brazil. See hypernic.

wood flour. Finely ground pine wood used as filler in plastic molding.

wood gum. Hemicelluloses extractable from wood by caustic soda.

wood oil. See balsam gurjun.

wood preservative. A chemical used to prevent the destruction or deterioration of wood by fungi, bacteria, insects, moisture, etc., e.g. asphalt and pitch paints, aluminum leaf, creosote, Basilite, sulfur and mercuric chloride.

wood pulp. A preparation of wood from which the cellulose has been more or less separated from the accompanying substances, as for example lignin, used in the manufacture of paper and artificial silk.

wood rosin. See rosin, wood.

wood sugar. See l-xylose.

wood tin. See cassiterite.

wood vinegar. See pyroligneous acid.

Wood's metal. A low melting alloy consisting of bismuth 50, lead 25, tin 12.5 and cadmium 12.5; m.p. 65.5; sp.gr. 9.70.

woof. See weft.

wool fat. A fat, known as "suint," occurring in wool up to 2%; in the refined state used in the preparation of lanolin or lanum (q.v.); one of the best preventives of rust and used also in making soap; see also, adeps lanae.

wool fat fatty acid. Fatty acid derived from the wool fats, e.g. stearic acid.

wool grease. See adeps lanae.

wool, grease. Wool as it comes from the living sheep, not washed or scoured.

wool, mineral. See slag wool and rock wool.

wool oil. See oil, wool.

wool pitch. A black amorphous solid residue remaining upon the distillation of wool fat, used in making hot neck greases for tinplate roll mills, for insulating purposes and in paper manufacturing.

wool, pulled. Wool taken from the skin of slaughtered sheep's pelt by slipping, sweating or the use of depilatory.

wool, rock. See rock wool.

wool, slag. See slag wool.

wool, top. A continuous untwisted band of wool fibers from which the shorter fibers or noils have been removed by combing.

wool wax (wool fat wax). Waxy material, consisting chiefly of esters of cholesterol and iso-cholesterol, which can be made to take up large amounts of water and is used in cosmetic and other water-in-oil emulsions.

work. The product of a force and the distance thru which it acts, measured in foot-pounds or gram-centimeters.

work function. Energy needed to transport electrons, ions, molecules etc. from the inside of one medium into an adjoining medium.

wormseed oil. See oil, wormseed.

wormwood oil. See oil, wormwood.

worsted yarn. See yarn, worsted.

wort. Liquid obtained from extracted grains in mashing (q.v.), containing maltose, dextrin, etc.

Woulfe's bottle. A glass bottle having two or more necks that can be used as a gas generator or as a gas washing bottle.

wrought iron. A ferrous material aggregated from a solidifying mass of pasty particles of highly refined metallic iron with which, without subsequent fusion, is incorporated mechanically and uniformly distributed a quantity of slag.

wulfenite. A mineral, $PbMoO_4$; tetr., yel., red, grn., gray, wh.; sp.gr. 6.7-7.0; hardness 2.5-3.0; a molybdenum ore.

Wurtz synthesis. Reaction whereby the halogen derivative of a hydrocarbon is treated with sodium producing a larger molecule, e.g. $2CH_3Cl + 2Na \rightarrow C_2H_6 + NaCl$.

würzite. See zinc sulfide.

wych-hazel. See hamamelis.

X

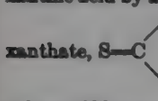
x-films. Very thin films in which molecules in successive layers are oriented in same way.

x-rays. Electromagnetics waves, shorter in wave length than the other light waves, produced by the bombardment of a metallic target with streams of electrons moving at high velocity such as cathode rays.

x-unit (Siegbahn unit). A measure of wave length equal to 10^{-11} centimeters.

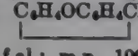
xanthaline. $C_{32}H_{36}N_2O_8$; m.w. 652.30; cr. powd.; m.p. 208; i.w.; s.al.

xanthate. Salt formed by replacing the hydrogen attached to the sulfur in xanthic acid by a metal, e.g. potassium



xanthate,

xanthene (dibenzo-1, 4-pyran; diphenyl methane oxide; o, o'-methylene diphenyl ether). $C_6H_4OC_6H_4CH_2$; m.w.

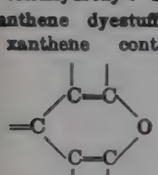


182.08; leaf. f.al.; m.p. 100.5; b.p. 315; s.w.; s.al.

9-xanthene-o-benzoic acid, 9-hydroxy-, lactone. See fluoran.

9-xanthene-o-benzoic acid, 3, 4, 5, 6-tetrahydroxy-. See gallin.

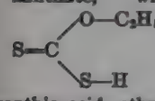
xanthene dyestuff. A derivative of xanthene containing the group



including the pyronines, e.g. the rhodamines.

9-xanthenone. See xanthone.

xanthic acid. Generally, an addition compound of an alcohol with carbon disulfide; specifically, an unstable oil yielding many salts, including cellulose xanthate, with the formula,



xanthic acid, ethyl ester (ethyl ethoxymethanethionothiolate; ethyl xanthogenate). $C_2H_5OCSSC_2H_5$; m.w. 150.20; cr., garlic odor; b.p. 200.

xanthine (2, 6 [1, 3] purinedione; 2, 6-dioxypurine). $C_5H_4N_4O_2$; m.w. 152.06; yel.-wh. powd., sm. pl.; becomes anh. at 125.

xanthine, 1, 3-dimethyl-. See theophylline.

xanthine, 3, 7-dimethyl-. See theobromine.

xanthine, 1, 3, 7-trimethyl-. See caffeine.

xanthogenamide. See carbamic acid, thiono-, ethyl ester.

xanthogenic acid (thiolthionocarbonic acid O-ethyl ester; ethylxanthogenic acid). C_2H_5OCSSH; m.w. 122.17; liq.; m.p. −53.

xanthogenic acid, ethyl-. See xanthogenic acid.

xanthone (9-xanthenone; diphenylene ketone oxide). $C{:}O(C_6H_4)_2{:}O$; a yellow carbohydrate pigment; m.w. 196.06; wh. need. f.al.; m.p. 174; b.p. 351; s.w.

xanthone, 1, 7-dihydroxy-. See euxanthone.

xanthone, 1, 7-dihydroxy-3-methoxy-. See gentisin.

xanthophyll (lutein). A dihydroxy carotene, $C_{40}H_{54}(OH)_2$; yel.; a chromolipid occurring with chlorophyll in green leaves, believed to be the residue left by the fading of chlorophyll.

xenon. Xe; at. wt. 131.3; col. inert gas; s.g. 5.851 g/l, lq. 3.06^{-108}; s. 2.7^{-148}; m.p. −112; b.p. −107.1; s.w.; rarest of the inert gases, occurring in air to extent of one part in twenty million.

xenotime (xenotimite). A mineral, $Y_2O_3 \cdot P_2O_5$; tetr., yel.-br., brnsh. red-gray; sp.gr. 4.45-4.56; hardness 4-5.

xenylamine (p-biphenylamine; 4-aminobiphenyl; p-phenylaniline). $C_6H_5{-}C_6H_4NH_2$; m.w. 169.09; col. leaf. f.dil.al.; m.p. 53; b.p. 302; s.w.; s.al.

xenyl isothiocyanate, xenyl mustard oil. See isothiocyanic acid, xenyl ester.

Xerol (Tegin). A glyceryl monostearate.

xylan. A pentosan of formula $(C_5H_8O_4)_n$, prepared from wheat straw.

m-xylene (1, 3-dimethylbenzene). $C_6H_4(CH_3)_2$; m.w. 106.08; col. liq.; m.p. −53.6; b.p. 138.8; i.w.; s.al.

o-xylene (1, 2-dimethylbenzene). $C_6H_4(CH_3)_2$; m.w. 106.08; col. liq.; m.p. −29; b.p. 144; i.w.; s.al.

p-xylene (1, 4-dimethylbenzene). $C_6H_4(CH_3)_2$; m.w. 106.08; col. monocl. or liq.; m.p. 15-6; b.p. 138; i.w.; s.al.

m-xylene, α-bromo- (m-xylyl bromide; ω-bromo-m-xylene). $CH_3C_6H_4CH_2Br$; m.w. 184.99; liq.; i.w.; s.al.

m-xylene, 4-bromo- (as-bromo-m-xylene). $BrC_6H_3(CH_3)_2$; m.w. 184.99; liq.; b.p. 203; i.w.; s.al.

o-xylene, α-bromo- (o-xylyl bromide; ω-bromo-o-xylene). $CH_3C_6H_3CH_2Br$; m.w. 184.99; pr.; m.p. 21; b.p. 217.7; i.w.; s.al.

o-xylene, 4-bromo- (as-bromo-o-xylene). $BrC_6H_3(CH_3)_2$; m.w. 184.99; liq.; m.p. −2; b.p. 214; i.w.; s.al.

p-xylene, α-bromo- (p-xylyl bromide; ω-bromo-p-xylene). $CH_3C_6H_4CH_2Br$; m.w. 184.99; need. f.al.; m.p. 38; b.p. 220.7; i.w.; s.al.

p-xylene, 2-bromo- (eso-bromo-p-xylene). $BrC_6H_3(CH_3)_2$; m.w. 184.99; liq.; m.p. 9; b.p. 200; i.w.; s.al.

m-xylene, α-chloro- (m-xylyl chloride; ω-chloro-m-xylene; m-tolyl chloride [incorrect]). $CH_3C_6H_4CH_2Cl$; m.w. 140.53; liq.; b.p. 196; i.w.; s.al.

o-xylene, α-chloro- (o-xylyl chloride; ω-chloro-o-xylene; o-tolyl chloride [incorrect]). $CH_3C_6H_4CH_2Cl$; m.w. 140.53; liq.; b.p. 199; i.w.; s.al.

p-xylene, α-chloro- (p-xylyl chloride; ω-chloro-p-xylene; p-tolyl chloride [incorrect]). $CH_3C_6H_4CH_2Cl$; m.w. 140.53; oil; b.p. 202; i.w.; s.al.

m-xylene, 4, 6-dibromo- (4, 6-dibromo-1, 3-dimethylbenzene). $C_6H_2Br_2(CH_3)_2$; m.w. 263.89; cr.; m.p. 69-72; b.p. 255-6; i.w.; s.al.

o-xylene, α, α'-dibromo- (o-xylylene bromide; o-xylylene dibromide; ω, ω'-dibromo-o-xylene). $C_6H_4(CH_2Br)_2$; m.w. 263.89; rhomb. cr. f. chl. m.p. 95; i.w.; s.al.

p-xylene, α, α'-dibromo- (p-xylylene bromide; p-xylylene dibromide). $C_6H_4(CH_2Br)_2$; m.w. 263.89; monocl. f.bz.; m.p. 143.5; b.p. 245; i.w.; s.al.

m-xylene, α, α-dichloro- (m-xylylene [di-] chloride; ω, ω'-dichloro-m-xylene). $C_6H_4(CH_2Cl)_2$; m.w. 174.98; col. cr.; m.p. 34.2; b.p. 255; i.w.; s.al.

p-xylene, α, α'-dichloro- (o-xylene [di-] chloride; ω, ω'-dichloro-o-xylene). $C_6H_4(CH_2Cl)_2$; m.w. 174.98; monocl. f. pet. eth.; m.p. 55; b.p. 241; i.w.; s.al.

p-xylene, α, α'-dichloro- (p-xylene [di-] chloride; ω, ω'-dichloro-p-xylene). $C_6H_4(CH_2Cl)_2$; m.w. 174.98; monocl. pl. or leaf.; m.p. 100.5; b.p. 240-50; i.w.; s.al.

m-xylene, 2, 4-dihydroxy-. See resorcinol, 2, 4-dimethyl-.

m-xylene, 2, 5-dihydroxy-. See hydroquinone, 2, 6-dimethyl-.

m-xylene, 4, 6-dihydroxy-. See resorcinol, 4, 6-dimethyl-.

o-xylene, dihydro-. See cantharene.

o-xylene, 3, 5-dihydroxy-. See resorcinol, 4, 5-dimethyl-.

o-xylene, 3, 6-dihydroxy-. See hydroquinone, 2, 3-dimethyl-.

p-xylene, 2, 6-dihydroxy-. See resorcinol, 2, 5-dimethyl-.

p-xylene, 2, 5-dihydroxy-. See hydroquinone, 2, 5-dimethyl-.

m-xylene, 2, 5-dinitro- (1, 3-dimethyl-2, 5-dinitrobenzene). $(NO_2)_2C_6H_2(CH_3)_2$; m.w. 196.08; ylsh. cr.f.al.; m.p. 101; s.al.

o-xylene, 3, 4-dinitro- (1, 2-dimethyl-3, 4-dinitrobenzene). $(NO_2)_2C_6H_2(CH_3)_2$; m.w. 196.08; need. f.al.; m.p. 82; s.al.

o-xylene, 3, 5-dinitro- (1, 2-dimethyl-3, 5-dinitrobenzene). $(NO_2)_2C_6H_2(CH_3)_2$; m.w. 196.08; yel. need. f.al.; m.p. 75-6; s.al.

o-xylene, 3, 6-dinitro- (2, 3-dimethyl-1, 4-dinitrobenzene). $(NO_2)_2C_6H_2(CH_3)_2$; m.w. 196.08; col. cr. f.al.; m.p. 89-90; s.w.; s.al.

o-xylene, 4, 5-dinitro- (1, 2-dimethyl-4, 5-dinitrobenzene). $(NO_2)_2C_6H_2(CH_3)_2$; m.w. 196.08; need. f.al.; m.p. 115-6; s.w.; s.al.

p-xylene, 2, 3-dinitro- (1, 4-dimethyl-2, 3-dinitrobenzene). $(NO_2)_2C_6H_2(CH_3)_2$; m.w. 196.08; monocl. pr.f.al.; m.p. 93; i.w.; s.al.

p-xylene, 2, 5-dinitro- (1, 4-dimethyl-2, 5-dinitrobenzene). $(NO_2)_2C_6H_2(CH_3)_2$; m.w. 196.08; yel. need. f.al.; m.p. 147; i.w.; s.al.

p-xylene, 2, 6-dinitro- (2, 5-dimethyl-1, 3-dinitrobenzene). $(NO_2)_2C_6H_2(CH_3)_2$; m.w. 196.08; need. f.al.; m.p. 123-4; i.w.; s.al.

α, α'-xylenediol. See xylyene glycol.

m-xylene, 4-ethyl- (1-ethyl-2, 4-dimethylbenzene). $(CH_3)_2C_6H_3C_2H_5$; m.w. 134.11; col. liq.; m.p. < −20; b.p. 185-6; i.w.; s.al.

m-xylene, 5-ethyl- (1-ethyl-3, 5-dimethylbenzene). $(CH_3)_2C_6H_3C_2H_5$; m.w. 134.11; col. liq.; m.p. < 20; b.p. 185; i.w.; s.al.

o-xylene, 4-ethyl- (4-ethyl-1, 2-dimethylbenzene). $(CH_3)_2C_6H_3C_2H_5$; m.w. 134.11; liq.; m.p. < −20; b.p. 189; i.w.; s.al.

p-xylene, 2-ethyl- (2-ethyl-1, 4-dimethylbenzene). $(CH_3)_2C_6H_3C_2H_5$; m.w. 134.11; liq.; m.p. < −20; b.p. 185; i.w.; s.al.

m-xylene, hexahydro-. See cyclohexane, 1, 3-dimethyl-.

p-xylene, hexahydro-. See cyclohexane, 1, 4-dimethyl-.

xylene, musk. See benzene, 1-tert-butyl-3, 5-dimethyl-2, 4, 6-trinitro-.

m-xylene, 2-nitro-. $NO_2C_6H_3(CH_3)_2$; m.w. 151.08; liq.; m.p. 13; b.p. 225; i.w.

m-xylene, 4-nitro-. $NO_2C_6H_3(CH_3)_2$; m.w. 151.08; liq.; m.p. 2; b.p. 244; i.w.; s.al.

m-xylene, 5-nitro-. $NO_2C_6H_3(CH_3)_2$; m.w. 151.08; col. need. al.; m.p. 71; b.p. 273.7; i.w.; s.al.

o-xylene, 3-nitro-. $NO_2C_6H_3(CH_3)_2$; m.w. 151.08; liq. or need. f.al.; m.p. 7-9; b.p. 245; i.w.; s.al.

o-xylene, 4-nitro-. $NO_2C_6H_3(CH_3)_2$; m.w. 151.08; yel. pr. f.al.; m.p. 30; b.p. 258; i.w.; s.al.

p-xylene, 2-nitro-. $NO_2C_6H_3(CH_3)_2$; m.w. 151.08; ylsh. liq.; b.p. 239.9; i.w.; s.al.

o-xylene-4-sulfonic acid (3, 4-xylenesulfonic acid). $(CH_3)_2C_6H_3SO_3H$; m.w. 186.14; pl.f.dil. H_2SO_4; s.w.

m-xylene, 2, 4, 6-trinitro-. $(NO_2)_3C_6H(CH_3)_2$; m.w. 241.08; rhomb. need. f.al. + bz.; m.p. 181.5; i.w.

p-xylene, 2, 3, 5-trinitro-. $(NO_2)_3C_6H(CH_3)_2$; m.w. 241.08; col. monocl. need. f.al.; m.p. 140; s.w.; s.al.

2, 3-xylenol (2, 3-dimethylphenol; vic-o-xylenol). $(CH_3)_2C_6H_3OH$; m.w. 122.08; lng. need. f.w.; m.p. 75; b.p. 218; s.w.; s.al.

2, 4-xylenol (2, 4-dimethylphenol; as-m-xylenol). $(CH_3)_2C_6H_3OH$; m.w. 122.08; col. need.; m.p. 26; b.p. 211.5; s.w.; s.al.

2, 5-xylenol (2, 5-dimethylphenol; p-xylenol). $(CH_3)_2C_6H_3OH$; m.w. 122.08; col. monocl. f.al. + et.; m.p. 74.5; b.p. 211.5; s.w.; s.al.

2, 6-xylenol (2, 6-dimethyl phenol; vic-m-xylenol). $(CH_3)_2C_6H_3OH$; m.w. 122.08; col. leaf.; m.p. 49; b.p. 212; s.w.; s.al.

3, 4-xylenol (3, 4-dimethylphenol; as-o-xylenol). $(CH_3)_2C_6H_3OH$; m.w. 122.08; need. f.w.; m.p. 65; b.p. 225; s.w.; s.al.

3, 5-xylenol (3, 5-dimethylphenol; sym-m-xylenol). $(CH_3)_2C_6H_3OH$; m.w. 122.08; need. f.w.; m.p. 68; b.p. 219.5; s.w.; s.al.

xylenol, chlormeta-. See chlormetaxylenol.

sym-m-xylic acid. See mesitylenic acid.

vic-o-xylic acid. See hemellitic acid.

p-xylic acid. See isoxylic acid.

2, 3-xylic acid. See hemellitic acid.

2, 4-xylic acid (2, 4-dimethylbenzoic acid; as-m-xylic acid). $(CH_3)_2C_6H_3COOH$; m.w. 150.08; col. monocl. m.p. 126; b.p. 268; s.w.; s.al.

2, 5-xylic acid. See isoxylic acid.

2, 6-xylic acid (2, 6-dimethylbenzoic acid; vic-m-xylic acid). $(CH_3)_2C_6H_3COOH$; m.w. 150.08; col. need. f.lgr.; m.p. 116; b.p. 274.5; s.w.; s.al.

3, 4-xylic acid (3, 4-dimethylbenzoic acid; as-o-xylic acid; paraxylic acid). $(CH_3)_2C_6H_3COOH$; m.w. 150.08; col. pr.f.al.; m.p. 165-6; s.w.; s.al.

3, 5-xylic acid. See mesitylenic acid.

2, 3-xylidine (2, 3-dimethylaniline; vic-o-xylidine). $(CH_3)_2C_6H_3NH_2$; m.w. 121.09; liq.; m.p. < −15; b.p. 223.8; s.w.; s.al.

2, 4-xylidine (2, 4-dimethylaniline; as-m-xylidine). $(CH_3)_2C_6H_3NH_2$; m.w. 121.09; liq.; b.p. 216; s.w.; s.al.

2, 5-xylidine (2, 5-dimethylaniline; p-

2, 6-XYLIDINE

xylidine). $(CH_3)_2C_6H_3NH_2$; m.w 121.09; oil; m.p. 15.5; b.p. 217; s.w.

2, 6-xylidine (2, 6-dimethylaniline; vic-m-xylidine). $(CH_3)_2C_6H_3NH_2$; m.w. 121.09; col. liq.; b.p. 216.9; i.w.; s.al.

3, 4-xylidine (3, 4-dimethylaniline; as-o-xylidine). $(CH_3)_2C_6H_3NH_2$; m.w. 121.09; monocl. tab. f.lgr.; m.p. 49; b.p. 226; s.w.

3, 5-xylidine (3, 5-dimethylaniline; sym-m-xylidine). $(CH_3)_2C_6H_3NH_2$; m.w. 121.09; liq.; b.p. 221; s.w.

xylidines. Liquid amines, ortho-, meta- and para- aminoxylenes; s.al.; i.w.; used in dyestuffs and as intermediates.

p-xylohydroquinone. See hydroquinone, 2, 5-dimethyl-.

xylol (xylene). A colorless liquid, a mixture of ortho-, meta- and para-xylenes; used as a solvent for rubber cements, lacquers and varnishes, in the removal of naphthalene from illuminating gas and as artificial musk.

Xylolith. A magnesium oxychloride cement (q.v.), containing sawdust, weather resistant and fireproof, which is used as a building and floor material

m-xyloquinone (2, 6-dimethylquinone). $(CH_3)_2C_6H_2O_2$; m.w. 136.06; yel. need.; m.p. 73.

o-xyloquinone (2, 3-dimethylquinone). $(CH_3)_2C_6H_2O_2$; m.w. 136.06; yel. need.; m.p. 55; s.w.; s.al.

p-xyloquinone. See phlorone.

m-xylorcinol. See resorcinol, 4, 6-dimethyl-.

p-xylorcinol. See resorcinol, 2, 5-dimethyl-.

l-xylose (wood sugar). $C_5H_{10}O_5$; m.w. 150.08; wh. rhomb. need.; m.p. 153; s.w.

xylyl bromide. See xylene, α-bromo-.

xylyl chloride. See xylene, α-chloro-.

xylylene alcohol. See xylylene glycol.

xylylene bromide. See xylylene, α, α′-dibromo-.

xylylene chloride. See xylylene, α, α′-dichloro-.

xylylene cyanide. See benzenediacetonitrile.

m-xylylene glycol (α, α′-m-xylenediol; 1, 3-benzenedicarbinol; m-xylylene alcohol). $C_6H_4(CH_2OH)_2$; m.w. 138.08; col. cr. f.bs.; m.p. 46-7; s.w.

o-xylylene glycol (α, α′-o-xylenediol; 1, 2-benzenedicarbinol; o-xylylene alcohol; phthalyl alcohol). $C_6H_4(CH_2OH)_2$; m.w. 138.08; pl.f.et.; m.p. 62.0-4.8; s.w.; s.al.

p-xylylene glycol (α, α′-p-xylenediol; 1, 4-benzenedicarbinol; p-xylylene alcohol). $C_6H_4(CH_2OH)_2$; m.w. 138.08; need.; m.p. 112-3; s.w.; s.al.

Xynomines. Sulfonated fatty acid condensates used as wetting agents and detergents in the textile industry

Y

Y-films. Very thin films in which molecules in successive layers are oriented in the same way.

yacca gum. A red or yellow resin containing phenolic bodies used as a source of picric acid, in manufacture of dyes and photographic chemicals; see also gum accroides.

yajeine. $C_{14}H_9N_3O$; m.w. 244.07; a crystalline alkaloid of toxic nature.

yara-yara. See ether, methyl 2-naphthyl.

yarn, backing. In pile fabric, the base yarn that holds the pile in place, formed by the stuffer yarn and the warp and filling of the fabric.

yarn count. Number of warp yarns per linear inch and the number of filling yarns per linear inch.

yarn number. A conventional relative measure of fineness, two systems being used: the units of standard lengths per standard weight and the units of standard weights per unit length, e.g. the number of thousands of yards per pound of yarn; often inaccurately termed "yarn count" or yarn size.

yarn, pile. The yarn forming the loops or tufts (cut loops) of a pile fabric.

yarn, porter. The two-ply warp yarn used in weaving gunny sack.

yarn, shotting. A single filling yarn used in weaving gunny sacking.

yarn, single. An assemblage of fibers or filaments, either natural or manufactured, twisted or laid together to form a strand for use in weaving, knitting or forming in any manner into textile materials.

yarn, woolen. Yarn spun from wool fibers which have been carded but not combed or gilled.

yarn, worsted. Yarn spun from wool fibers which have been scoured, carded, and either gilled or combed, or both.

yeast. Microscopic round or oval vegetable cells belonging to the fungi family. Ordinary yeast are the Saccharomyces cerevisiae and are used in fermentation of sugars, brewing, medicine, bread-making.

Yelkin T. An oil-soluble organic phosphatide, consisting chiefly of lecithin, used as a wetting agent for oils in the textile, paint and leather industries.

yellow cross, liquid. See sulfide, β, β'-dichloroethyl.

yellow dock (rumex). Dried roots of Rumex crispus, containing tannins, used in medicine as a mild laxative and astringent.

yellow puccoon. See hydrastis.

yellow root. See hydrastis.

yerbe maté. The leaves of a tree found in Paraguay, similar to tea, used as a beverage.

yetterolilmenite. See samarskite.

yield (yield value). Number of pounds or gallons of finished product obtained from a particular process batch.

yield point (yield value). Unit stress at which, a specimen being tested, begins to stretch without an increase in load.

yield strength. Stress at which a material shows a specified limiting permanent set.

yield stress. Static stress, developed by a material, which first causes a visible permanent set.

yield value. Force or shearing stress required to deform a plastic substance continuously; see yield and yield point.

-yl. Ending of univalent radicals derived from aromatic hydrocarbons or heterocyclic compounds by the removal of a hydrogen atom from the ring, e.g. tolyl, $CH_3C_6H_4$—.

-ylidene (-ylidyne). Suffix of bivalent or trivalent radicals derived from saturated hydrocarbons by removal of 2 or 3 hydrogen atoms from the same carbon atom, e.g. ethylidene, CH_3CH=.

ylang ylang oil. See oil, ylang ylang.

yocca. A drug obtained from the bark and stems of the Yocca plant containing caffeine, and used as a stimulant.

yohimbine (corynine). $C_{21}H_{26}N_2O_3$; m.w. 354.22; col. need. f.w. + al.; m.p. 248; s.w.; s.al.

yohimbine, hydrochloride (d) (corynine hydrochloride; aphrodine hydrochloride). $C_{21}H_{26}N_2O_3 \cdot HCl$; m.w. 390-68; col. cr.; s.w.

yohimbine, nitrate. $C_{21}H_{26}N_2O_3 \cdot HNO_3$; m.w. 417.23; col. pr.; m.p. 276.

Young's modulus. Ratio of longitudinal force per unit cross section in a stretched elastic solid to change in length per unit length.

yperite. See sulfide, β, β'-dichloroethyl.

ytterbium. Yb; at. wt. 173.04; m.p. 1800; a rare element found in small quantities in most minerals containing yttrium.

ytterbium acetate. $Yb(C_2H_3O_2)_3 \cdot 4H_2O$; m.w. 422.63; hex. pl.; s.g. 2.09; m.p. $-4H_2O$, 100; s.w.

ytterbium chloride. $YbCl_3 \cdot 6H_2O$; m.w. 387.96; rhomb. grn.; s.g. 2.575; m.p. 150-5; b.p. $-6H_2O$, 180; s.w.; s.abs.al.

ytterbium oxalate. $Yb_2(C_2O_4)_3 \cdot 10H_2O$; m.w. 791.16; col. cr.; s.g. 2.644; i.w.

ytterbium oxide. Yb_2O_3; m.w. 395.00; col.; s.g. 9.17; i.w.

ytterbium oxide. $Yb_2O_3 \cdot 6H_2O$; m.w. 503.09; gelat.; i.w.

ytterbium selenate. $Yb_2(SeO_4)_3 \cdot 8H_2O$; m.w. 920.72; hex. pl.; s.g. 3.30; s.w. d.

ytterbium selenite. $Yb_2(SeO_3)_3$; m.w. 728.60; i.w.

ytterbium sulfate. $Yb_2(SO_4)_3$; m.w. 635.18; col.; s.g. 3.793; m.p. d. 900; s.w.

ytterbium sulfate. $Yb_2(SO_4)_3 \cdot 8H_2O$; m.w. 779.30; prisms; s.g. 3.286; s.w.

yttrium. Y; at. wt. 88.92; hex. gray-blk. met.; s.g. 5.51; m.p. 1490; b.p. 2500 d.; s.w.; a rare earth element.

yttrium acetate. $Y(C_2H_3O_2)_3 \cdot 4H_2O$; m.w. 338.05; s.w.

yttrium bromate. $Y(BrO_3)_3 \cdot 9H_2O$; m.w. 634.81; hex. pr.; m.p. 74; b.p. $-6H_2O$, 100; s.w.; s.al.

yttrium bromide. YBr_3; m.w. 328.67; s.w.; s.al.

yttrium bromide. $YBr_3 \cdot 9H_2O$; m.w. 490.81; col. tabl., deliq.; s.w.; s.al.

yttrium carbide. YC_2; m.w. 112.92; micro-cr. yel.; s.g. 4.13 [18].

yttrium carbonate. $Y_2(CO_3)_3 \cdot 3H_2O$; m.w. 411.89; wh.-redsh. powd.; i.w.; i.al.

yttrium chlorate, per-, hexaantipyrene. $Y(COC_{15}H_{12}N_2)_6(ClO_4)_3$; m.w. 2163.-05; col. hex. cr.; m.p. 293-6 d.; s.w.

yttrium chloride. YCl_3; m.w. 195.29; shin. wh. leaf.; s.g. 2.8 [15]; m.p. 680; s.w.; s.al.

yttrium chloride. $YCl_3 \cdot H_2O$; m.w. 213.31; col.; m.p. $-H_2O$, 160; s.w.

yttrium chloride. $YCl_3 \cdot 6H_2O$; m.w. 303.38; rhomb. redsh.-wh., deliq.; s.g. 2.8 [15]; m.p. $-5H_2O$, 100; s.w.; s.al.

yttrium fluoride. $YF_3 \cdot \frac{1}{2}H_2O$; m.w. 154.93; gelat.; i.w.

yttrium hydroxide. $Y(OH)_3$; m.w. 139.94; wh.-yel., gelat. or powd.; i.w.

yttrium iodide. YI_3; m.w. 469.68; deliq.; s.w.; s.al.

yttrium iodide, hexaantipyrine. $Y(COC_{15}H_{12}N_2)_6I_3$; m.w. 2246.34; col. cr.; m.p. 280-2; s.w.

yttrium nitrate. $Y(NO_3)_3 \cdot 4H_2O$; m.w. 347.01; redsh. wh. pr.; s.g. 2.682; s.w.; s.al.

yttrium nitrate. $Y(NO_3)_3 \cdot 6H_2O$; m.w. 383.04; redsh.-col., deliq. cr.; s.g. 2.68; m.p. $-3H_2O$, 100; s.w.; s.al.

yttrium oxalate. $Y_2(C_2O_4)_3 \cdot 9H_2O$; m.w. 603.98; wh. cr. powd.; i.w.

yttrium oxide. Y_2O_3; m.w. 225.84; col.-yelsh. cr. or powd.; s.g. 4.84; m.p. 2410; i.w.

yttrium sulfate. $Y_2(SO_4)_3$; m.w. 466.02; wh. powd.; s.g. 2.52; m.p. d. 1000; s.w.

yttrium sulfate. $Y_2(SO_4)_3 \cdot 8H_2O$; m.w. 610.14; monocl. col.-redsh.; s.g. 2.558; m.p. $-8H_2O$, 120; b.p. d. 700; s.w.; i.al.

yttrium sulfide. Y_2S_3; m.w. 274.02; yel. powd.

yucca gum. See gum accroides.

Yumidol. A concentrated sorbitol syrup.

Z

Zamak. A die-casting alloy containing 4% aluminum, 3% copper, 0.1% magnesium, and the rest zinc.

Zanzibar gum. See gum, Zanzibar.

zapota gum. See gum, chicle.

zeaxanthin. Isomer of xanthophyll (q.v.).

zedoary oil. See oil, zedoary.

Zeeman effect. Effect of a magnetic field on the spectrum, resulting in the resolution of a spectral line into two or more components.

zein. A protein found in maize or Indian corn existing in both the soluble and insoluble forms, lacking the amino-acids, lysin and tryptophane.

Zelan. A complex organic compound used as a textile finishing agent to impart lasting water repellency and spot and stain resistance, and also used as a softening agent.

zeolite (prehnite). Naturally occurring doubly hydrated silicate of aluminum and calcium (or sodium).

zero, absolute. See absolute zero.

zero branch. Series of lines of a molecular spectrum absorption band where there is no change in rotational quantum number in the formation of any one line.

zero-point energy. Energy of the molecule when its vibrational and rotational quantum numbers are both zero, occurring when molecule is at absolute zero.

Zerone. A methanol anti-freeze mixture.

zeroth. Adjective of cardinal number zero.

zeunerite. A radioactive mineral, $Cu(UO_2)_2As_2O_8 \cdot 8H_2O$; tetr.; sp.gr. 3.28; hardness 2.0-2.5.

Zimate. Zinc dimethyldithiocarbonate rubber accelerator.

zinc. Zn; at. wt. 65.38; hex. bluish-wh. met.; s.g. 7.14; m.p. 419.4; b.p. 907; i.w.; used in galvanizing, making of alloys and in electric batteries.

zinc acetate. $Zn(C_2H_3O_2)_2$; m.w. 183.43; monocl.; s.g. 1.84; m.p. 142; s.w.; s.al.

zinc acetate. $Zn(C_2H_3O_2)_2 \cdot 2H_2O$; m.w. 219.46; monocl. col.; s.g. 1.735; m.p. 237; b.p. $-2H_2O$, 100; s.w.; s.al.

zinc aluminate (gahnite). $ZnAl_2O_4$; m.w. 183.32.

zinc amide. $Zn(NH_2)_2$; m.w. 97.43; amor.

zinc ammonia chloride. $ZnCl_2 \cdot 2NH_3$; m.w. 170.36; col.; m.p. 210.8; b.p. d. 271.

zinc ammonia chloride. $ZnCl_2 \cdot 5NH_3 \cdot H_2O$; m.w. 239.47; wh. powd., deliq. $-NH_3$ on expos.; s.w. d.

zinc ammonium sulfate. $ZnSO_4 \cdot (NH_4)_2SO_4 \cdot 6H_2O$; m.w. 401.67; monocl. wh.; s.g. 1.931; s.w.

zinc arsenate, ortho- (koettigite). $Zn_3(AsO_4)_2 \cdot 8H_2O$; m.w. 618.12; monocl.; s.g. 3.309 [15]; m.p. d. 100; i.w.

zinc arsenite. See zinc arsenite, meta-.

zinc arsenite, meta-. A timber preservative which is permanent and which is practically non-corrosive to iron.

zinc benzoate. $Zn(C_7H_5O_2)_2$; m.w. 307.46; wh. powd.; s.w.

zinc blende. See sphalerite.

zinc bloom. See hydrozincite.

zinc borate. $ZnBO_3$; m.w. 124.20; wh. amor. powd.; s.w.

zinc bromate. $Zn(BrO_3)_2 \cdot 6H_2O$; m.w. 429.31; cub. wh.; s.g. 2.566; m.p. 100; b.p. $-6H_2O$, 200; s.w.

zinc bromide. $ZnBr_2$; m.w. 225.21; rhomb. col., hyg.; s.g. 4.219; m.p. 394; b.p. 650; s.w.; s.al.

zinc carbonate (smithsonite). $ZnCO_3$; m.w. 125.38; trig. col.; s.g. 4.44; m.p. $-CO_2$ 300; i.w.

zinc carbonate, sub-. $2ZnCO_3 \cdot 3Zn(OH)_2$; m.w. 548.95; impalpable wh. powd.; i.w.; i.al.

zinc chlorate. $Zn(ClO_3)_2 \cdot 4H_2O$; m.w. 304.36; cub. col.-yelsh., deliq.; s.g. 2.15; m.p. d. 60; s.w.; s.al.

zinc chloride. $ZnCl_2$; m.w. 136.29; cubic wh., deliq.; s.g. 2.91 [25]; m.p. 262; b.p. 732; s.w.; s.al.

zinc chromate. $ZnCrO_4 \cdot 7H_2O$; m.w. 307.44; a yellow crystalline substance; i.w.; used as a pigment and catalyst.

zinc chromate, di-. $ZnCr_2O_7$; m.w. 281.40; or.-yel. powd.; i.w.; i.al.

zinc chromate, double salt. $ZnCrO_4$ and $K_2Cr_2O_7$; yel. cryst. powd.; pigment in paints and varnishes.

zinc citrate. $Zn_3(C_6H_5O_7)_2 \cdot 2H_2O$; m.w. 610.25; wh. amor. powd.; s.w.

zinc cyanide. $Zn(CN)_2$; m.w. 117.40; rhomb. col.; m.p. d. 800; i.w.; i.al.

zinc, diethyl- (zinc ethyl; zinc diethyl). $Zn(C_2H_5)_2$; m.w. 123.46; col. liq., ign. in air; m.p. -40; b.p. 117-8.

zinc, dimethyl- (zinc methyl; zinc methide). $Zn(CH_3)_2$; m.w. 95.43; col. liq., ign.; m.p. -40; b.p. 46.

zinc dust. A fine gray powder used in the making of dyes as a reducing agent, in making lithopone and in galvanizing by the Cowper-Cowles process.

zinc ferrocyanide. $Zn_2Fe(CN)_6$; m.w. 342.65; wh. powd.; i.w.

zinc ferrocyanide. $Zn_2FeCN_6 \cdot 3H_2O$; m.w. 396.69; wh. powd.; i.w.; i.al.

zinc fluoride. ZnF_2; m.w. 103.38; monocl. or tricl.; s.g. 4.84 [15]; m.p. 872; s.w.; i.al.

zinc fluoride. $ZnF_2 \cdot 4H_2O$; m.w. 175.44; rhomb.; s.g. 2.535 [13]; m.p. $-4H_2O$, 100; s.w.

zinc fluosilicate. $ZnSiF_6 \cdot 6H_2O$; m.w. 315.53; hex. pr., col.; s.g. 2.104; s.w.

zinc fluosilicate, tetrapyridine. $Zn(C_5H_5N)_4 \cdot SiF_6$; m.w. 523.63; rhomb. wh.; s.g. 2.197.

zinc formate. $Zn(CHO_2)_2$; m.w. 155.40; s.g. 2.36.

zinc formate. $Zn(CHO_2)_2 \cdot 2H_2O$; m.w. 191.43; monocl. wh.; s.g. 2.205; s.w.; i.al.

zinc glycerophosphate. $ZnC_3H_5(OH)_2PO_4$; m.w. 235.45; wh. amor. powd.; s.w.; i.al.

zinc hydroxide. $Zn(OH)_2$; m.w. 99.40; rhomb. col.; s.g. 3.053; m.p. d. 125; i.w.

zinc iodate. $Zn(IO_3)_2$; m.w. 415.22; wh. cr. powd.; s.g. 4.98; s.w.

zinc iodate. $Zn(IO_3)_2 \cdot 2H_2O$; m.w. 451.25; s.w.

zinc iodide. ZnI_2; m.w. 319.22; cub. col. or wh. powd., hyg.; s.g. 4.666 [14.2]; m.p. 446; b.p. 624; s.w.; s.al.

zinc lactate. $Zn(C_3H_5O_3)_2 \cdot 3H_2O$; m.w. 297.50; wh. cr.; s.w.

zinc manganate, per-. $Zn(MnO_4)_2 \cdot 6H_2O$; m.w. 411.33; vlt. br. or blk., deliq.; m.p. $-5H_2O$ 100; s.w.

zinc manganese chloride. $2ZnCl_2 \cdot MnCl_2 \cdot 3H_2O$; m.w. 452.48; rose-red cr.; s.w. with turbidity; s.al.

zinc methide. See zinc, dimethyl-.

zinc nitrate. $Zn(NO_3)_2 \cdot 3H_2O$; m.w. 243.44; m.p. 45.5.

zinc nitrate. $Zn(NO_3)_2 \cdot 6H_2O$; m.w. 297.49; tetr. col.; s.g. 2.065 [14]; m.p. 36.4; b.p. $-6H_2O$, 105-131; s.w.; s.al.

zinc nitride. Zn_3N_2; m.w. 224.16; gray.

zinc oxalate. $ZnC_2O_4 \cdot 2H_2O$; m.w. 189.41; wh. powd.; s.g. 2.562; m.p. s. 100; i.w.

zinc oxide. ZnO; m.w. 81.38; wh. or yelsh., amor. powd.; s.g. 5.47; m.p. >1800; i.w.

zinc oxide (zincite). ZnO; m.w. 81.38; hex. wh.; s.g. 5.606; m.p. >1800; b.p. subl. 1800; i.w.; i.al.

zinc oxide, per-. ZnO_2; m.w. 97.38; wh.-yel. powd.; s.w.

zinc palmitate. $Zn(C_{16}H_{31}O_2)_2$; m.w. 575.88; wh. amorp. powd.; m.p. 100; i.w.; i.al.; used in flatting lacquers and in rubber compounding.

zinc phenolsulfonate. $Zn(C_6H_5SO_4)_2 \cdot 8H_2O$; m.w. 555.70; clear, col. cr. or fine wh. powd. efflor.; s.w.; s.al.

zinc phosphate, ortho-. $Zn_3(PO_4)_2$; m.w. 386.18; rhomb. col.; s.g. 3.998 [15]; m.p. 900; i.w.; i.al.

zinc phosphate, ortho- (α hopeite). $Zn_3(PO_4)_2 \cdot 4H_2O$; m.w. 458.24; rhomb. col.; s.g. 3.04; m.p. tr. >105; i.w.

zinc phosphate, ortho- (β hopeite). $Zn_3(PO_4)_2 \cdot 4H_2O$; m.w. 458.24; rhomb. col.; s.g. 3.03; m.p. tr. >140; i.w.

zinc phosphate, ortho- (para hopeite). $Zn_3(PO_4)_2 \cdot 4H_2O$; m.w. 458.24; tricl. col.; m.p. tr. >163; i.w.

zinc phosphate, ortho-. $Zn_3(PO_4)_2 \cdot 8H_2O$; m.w. 530.30; rhomb. pl.; s.g. 3.109 [15]; i.w.

zinc phosphate, ortho-, acid. $ZnH(PO_4)_2 \cdot 2H_2O$; m.w. 295.48; tricl.; m.p. 100 d.

zinc phosphate, pyro-. $Zn_2P_2O_7$; m.w. 304.80; wh. powd.; s.g. 3.75 [23]; i.w.

zinc phosphide. Zn_3P_2; m.w. 258.18; cub. dk. gray; s.g. 4.55 [15]; m.p. >420; b.p. 1100; i.w.; i.al.

zinc phosphite, hypo-. $Zn(H_2PO_2)_2 \cdot H_2O$; m.w. 213.47; col., hyg. cr. powd.; s.w.

zinc phosphite, ortho-. $ZnHPO_3 \cdot 2\frac{1}{2}H_2O$; m.w. 190.45; gran., cr. powd.; s.w.

zinc picrate. $Zn[C_6H_2(NO_2)_3O]_2 \cdot 8H_2O$; m.w. 665.58; yel. cr. powd., exp.; s.w.

zinc salicylate. $Zn(C_7H_5O_3)_2 \cdot 3H_2O$; m.w. 393.50; need.; s.w.; s.al.

zinc selenide. ZnSe; m.w. 144.58; hex.; s.g. 5.42 [15]; i.w.

zinc silicate. $ZnSiO_3$; m.w. 141.44; hex. col.; s.g. 3.52; m.p. 1437; i.w.

zinc silicate (willemite). $2ZnO \cdot SiO_2$; m.w. 222.82; trig.; s.g. 3.9; m.p. 1509; i.w.

zinc silicate (calamine). $2ZnO \cdot SiO_2 \cdot H_2O$; m.w. 240.84; rhomb.; s.g. 3.45; i.w.

zinc-spinel. See gahnite.

zinc stearate. $Zn(C_{18}H_{35}O_2)_2$; m.w. 631.86; wh. amorph. powd.; i.w.; i.al.; used as a drier in paints and in enamels, face powders, fireproofing compositions and oilcloth.

zinc sulfate (zinkosite). $ZnSO_4$; m.w. 161.44; rhomb. col.; s.g. 3.74 [15]; m.p. d. 740; s.w.; s.al.

zinc sulfate. $ZnSO_4 \cdot 6H_2O$; m.w. 269.53; monocl. or tetr. col.; s.g. 2.072 [15]; m.p. tr. 70; s.w.

zinc sulfate (goslarite). $ZnSO_4 \cdot 7H_2O$; m.w. 287.55; rhomb. col., efflor.; s.g. 1.97; m.p. tr. 39; b.p. $-7H_2O$, 280; s.w.; s.al.

zinc sulfide (α) (würzite). ZnS; m.w. 97.44; hex. col.; s.g. 4.087; m.p. 1850 [160 atm.]; b.p. subl.; 1185; i.w.

zinc sulfide (β) (sphalerite). ZnS; m.w. 97.44; cub. col.; s.g. 4.102 [25]; m.p. tr. 1020; i.w.

zinc sulfide (blende). ZnS; m.w. 97.44; gray; s.g. 4.03-.07; m.p. 1800-1900; b.p. subl. 1180; i.w.

zinc sulfide. $ZnS \cdot H_2O$; m.w. 115.46; yelsh.-wh. powd.; s.g. 3.98; m.p. 1049; b.p. subl. 1180; i.w.

zinc sulfite. $ZnSO_3 \cdot 2H_2O$; m.w. 181.47; wh. cr. powd.; s.w.; i.al.

zinc sulfite. $ZnSO_3 \cdot 2\frac{1}{2}H_2O$; m.w. 190.48; s.w.; i.al.

zinc sulfoxylate, formaldehyde. $Zn(HSO_2 \cdot CH_2O)_2$; m.w. 255.55; rhomb. pr.; s.w.; i.al.

zinc sulfoxylate, formaldehyde basic. $Zn(OH)HSO_2 \cdot CH_2O$; m.w. 177.47; rhomb. pr.; i.w.; i.al.

zinc tartrate. $ZnC_4H_4O_6 \cdot H_2O$; m.w. 231.43; wh. powd.; s.w.

zinc telluride. ZnTe; m.w. 192.88; cub. red; s.g. 5.54 [12]; m.p. 1238.5; i.w.

zinc thiocyanate. $Zn(CNS)_2$; m.w. 181.52; wh. powd.; s.w.; s.al.

zinc valerate. $Zn(C_5H_9O_2)_2 \cdot 2H_2O$; m.w. 303.55; wh. glist. sc. or powd., disag. odor; s.w.; s.al.

zinc vitriol. See goslarite.

zinc yellow. See zinc chromate, double salt.

zincate. A compound containing the double-negative radical, $ZnO_2^{=}$, e.g. potassium zincate, K_2ZnO_2.

zincite (red zinc ore). A mineral, ZnO; hex., red or yel., sp.gr. 5.43-5.70; hardness 4.0-5.0.

zingiber. See ginger.

zinkosite. See zinc sulfate.

Zinol. Mineral spirits containing 65% zinc resinate and rosin.

Zintox. Basic zinc arsenate used in agricultural sprays.

zircon (hyacinth, jargon). A mineral, $ZrSiO_4$; tetr., col., pa. yel., gray, yelsh. grn., br., redsh.-br.

zirconium. Zr; at. wt. 91.22; cub. silv. wh.-gray; s.g. 6.4; m.p. 1900; b.p. >2900; i.w.

zirconium acetate, basic. $Zr(C_2H_3O_2)_3OH$; m.w. 285.30; wh. cr.; s.w.

zirconium ammonium fluoride. $Zr(NH_4)_3F_7$; m.w. 278.34; col.; s.w.

zirconium bromide. $ZrBr_4$; m.w. 410.88; wh. cr. powd.; s.al.

zirconium carbide. ZrC; m.w. 103.22; hard metallic; b.p. 5100; i.w.

zirconium chloride, tetra-. $ZrCl_4$; m.w. 233.05; wh. lust. cr.; s.g. 2.80; m.p. subl. 300; s.w.; s.al.

zirconium fluoride. ZrF_4; m.w. 167.22; hex. col.; s.g. 4.43; s.w.

zirconium hydroxide. $Zr(OH)_4$; m.w. 159.25; gelat. or wh. amor. powd.; s.g. 3.25; s.w.; i.al.

zirconium iodide, tetra-. ZrI_4; m.w. 598.90; red. br. cr.; s.w.

zirconium oxide, di- (baddeleyite). ZrO_2; m.w. 123.22; monocl.; s.g. 5.49; m.p. 2700; b.p. (4300); i.w.

zirconium oxide, di- (free from hafnium). ZrO_2; m.w. 123.22; s.g. 5.73; i.w.

zirconium oxide, per-. ZrO_3; m.w. 139.22; wh. ppt.

rconium phosphide. ZrP_2; m.w. 153.26; s.g. 4.77 [25]; i.w.

rconium selenate. $Zr(SeO_4)_2 \cdot 4H_2O$; m.w. 449.68; hex. transp. cr.; m.p. $-3H_2O$, 100; b.p. $-4H_2O$, 100; s.w.

rconium silicate (sircon or hyacinth). $ZrSiO_4$; m.w. 183.28; tetr. red or var. color; s.g. 4.56; m.p. 2550; i.w.

rconium silicide. $ZrSi_2$; m.w. 147.34; rhomb. lust. met.; s.g. 4.88 [22].

rconium sulfate. $Zr(SO_4)_2 \cdot 4H_2O$; m.w. 355.40; rhomb. col. or wh. cr. powd.; m.p. $-3H_2O$, 120; s.w.; i.al.

zirconyl bromide. $ZrOBr_2 \cdot 8H_2O$; m.w. 411.18; brill. need., deliq.; m.p. $-4H_2O$, 120; s.w.

zirconyl chloride. $ZrOCl_2 \cdot 8H_2O$; m.w. 322.26; tetr. need. wh., effl.; m.p. $-6H_2O$, 150; b.p. $-8H_2O$, 210; s.w.; s.al.

zirconyl hydroxide. $ZrO(OH)_2$; m.w. 141.24; gelat. wh.; s.w.; s.al.

zirconyl iodide. $ZrOI_2 \cdot 8H_2O$; m.w. 505.18; col. need., hyg.; s.w.; s.al.

zirconyl sulfide. $ZrOS$; m.w. 139.28; yel. powd.; s.g. 4.87.

Zitro. Zinced rosin.

Zonite. A sodium hypochlorite solution containing 0.9% available chlorine used as a disinfectant and antiseptic.

zoögloea. Irregular slimy agglomeration of bacteria.

zoophyte. A plant-like animal, such as the sponge and coral.

zoösterol. Sterol of animal origin.

Zwitter ion (dual ion). Organic ion carrying both a positive and negative charge.

zygotene. Stage of meiosis when pairing of homologous chromosomes takes place.

zymase. An enzyme secreted by living cells of yeast and which catalyzes fermentation.

zymo-exciter. A promoter of catalysis in diastatic conversions, e.g. sulfuric acid.

zymogen (proenzyme). Inactive form of an enzyme, e.g. pepsinogen.

zymotic. A germ disease; pertaining to enzymes.

The Greek Alphabet

Listing the Greek letters, their names and, in parentheses, their English equivalents, respectively.

A, α. Alpha (a).
B, β. Beta (b).
Γ, γ. Gamma (g).
Δ, δ. Delta (d).
E, ε. Epsilon (ĕ).
Z, ζ. Zeta (z).
H, η. Eta (ē).
Θ, θ. Theta (th).
I, ι. Iota (i).
K, κ. Kappa (k).
Λ, λ. Lambda (l).
M, μ. Mu (m).
N, ν. u (Nn).
Ξ, ξ. Xi (x).
O, o. Omicron (ŏ).
Π, π. Pi (p).
P, ρ. Rho (r).
Σ, σ. Sigma (s).
T, τ. Tau (t).
Υ, υ. Upsilon (u).
Φ, φ. Phi (ph).
X, χ. Chi (ch).
Ψ, ψ. Psi (ps).
Ω, ω. Omega (ō).

Greek Symbols

α. Degree of electrolytic dissociation; angle of optical rotation; coefficient of thermal expansion; acceleration.

[α]. Specific optical rotation; surface concentration excess.

β. Specific heat constant; coefficient of thermal expansion (volumetric); coefficient of compressibility.

Γ. Surface concentration excess; activity coefficient of electrolytes.

γ. Microgram; surface tension; ratio of (C_p/C_v); gamma magnetic unit, equal to 1×10^{-5} gauss; conductivity (specific conductance).

ϵ_e. Electrode potential above that of normal calomel electrode.

ϵ_h. Electrode potential above that of normal hydrogen.

ζ. Electrokinetic potential.

η. Efficiency of any process; viscosity; absolute viscosity; electrolytic polarization, overvoltage.

θ. Angle (plane); angular displacement; temperature C. above ice-point; angle of contact; time.

K. Ratio of heat capacity at constant pressure to heat capacity at constant temperature; cell constant.

κ. Compressibility; specific conductance; magnetic susceptibility-volume; electrical (volume) conductivity; ratio of specific heats.

Λ. Equivalent conductivity (electrical).

λ. Wave length; heat of vaporization.

λ_m. Wave-length of maximum monochromatic radiance of black-body at stated temperature.

μ. Chemical potential; dipole moment; magnetic permeability; absolute viscosity; with subscript: refractive index; micron; micro-; molecular conductivity (electrical); mobility; Joule-Thomson coefficient.

μμ. Micromicron; micromicro-.

ν. Kinematic viscosity; frequency; wave length; reluctivity (specific magnetic resistance); number of ions formed on complete dissociation of a molecule.

ν_∞. Rydberg's fundamental frequency.

Π. Product; the continued product of all terms such as ——; pressure, especially osmotic pressure.

π. Number 3.14159265+; ratio of circumference of a circle to its diameter; electrolytic polarization; overvoltage.

ρ. Resistivity (specific resistance); density.

Σ. Summation of ——, commonly used to indicate summation of finite differences, and nearly like $\int$.

σ. Surface tension; ionic strength; diameter of molecules; specific conductance; Stefan-Boltzmann constant.

τ. Time interval, especially half or mean life; tractive force on wetted surface per unit area.

Φ. Function.

φ. Fluidity; electronic exit work function; magnetic flux; phenyl, C_6H_5—.

φ(x). Function of x (Mathematics).

χ. Magnetic susceptibility-mass.

Ψ. Luminous flux.

ψ. Wave function.

Ω. Ohm.

[Ω]. Relative molecular magnetic rotatory power with reference to water.

ω. Solid angle; angular velocity.

[ω]. Specific magnetic rotatory power.

Δ. Diffusion coefficient; finite difference; a double bond; increment; a finite increase in any thermodynamic quantity whenever a system changes from an initial to a second state.

Δ_x. Increment of x.

δ. Very small increment; variation, as δx, the variation of x.

ε. The number 2.7182818+, base of Naperian or natural system of logarithms; eccentricity of a conic section; dielectric constant; electrode potential; molar extinction coefficient.

Mathematical Symbols

\+ Plus (sign of addition); positive.
− Minus (sign of subtraction); negative.
±(∓) Plus or minus; positive or negative.
×(·) Multiplied by.
·(×) Multiplied by.
÷ (:) Divided by.
: (÷) Divided by.
/ Divided by.
=(∷) Equals, is equal to; as.
$\not<$ Negative of <, a $\not<$ b denotes that a is not less than b.
$\not>$ Is not greater than; a $\not>$ b denotes that a is not greater than b.
≠ Is not equal to.
$\neq$ Is not equal to.
≐ Is approximately equal to; approaches.
→ Approaches.
≙ Denotes equivalence in area or volume.
≦ Approximately equal to.
≈ Approximately equal to.
∼ The difference between; denoting a difference between two quantities without designating the greater, as, a ∼ b.
∝ Varies as; is proportional to.
∞ Infinity; indefinitely great; infinite; soluble in all proportions.
! (⌊) The continued product of numbers from one upward; the factorial, as 4! signifies 1 × 2 × 3 × 4.
⌊ (!) The continued product of numbers from one upward; the factorial; ⌊4 signifies 1 × 2 × 3 × 4.
∴ Therefore; hence; on this account.
∵ Because; since.
. . . . And so on.
≡ Is identically equal to; is congruent with.
∋ Is a part of.
∼ Is similar to.
∽ Is similar to.
≠ (≢) Is not identically equal to.
≶ Is greater than or less than but not equal to.
∷ (=) Equals, is equal to; as.
: The ratio of; is to; used to indicate geometrical proportion.
≒ Is approximately equal to.
> Greater than; above.
< Less than; below.
≶ Equal to or greater than.
≧ Greater than or equal to.
≷ Equal to or less than.
≦ Less than or equal to.
⊂ Is contained in.
⊄ Is not contained in.
⊆ Is contained in or equal to.
% Per hundred; per cent.
‰ Per thousand or 0.1%.
√ Square root.
$\sqrt[n]{}$ The n^{th} root.
$\frac{dy}{dx}$ Derivative of $y = f(x)$ with respe to x.
∂ Partial differential.
$\frac{\partial z}{\partial x}$ Partial derivative of z with respe to x.
$\int$ Integral; integral of ——.
$\int_a^b$ Integral between the value b its variable and its value a.
(I) Symbol for a quantic which h no numerical coefficients; as
(a,b,c,d, I x,y) = $ax^3+bx^2y+cxy^2+dy^3$
° Degree (arc or temperature).
′ Minute of arc (sexagesimal); foot.
″ Second of arc (sexagisimal); inch.
( ) Parentheses.
[ ] Brackets.
{ } Braces.
∠ Angle.
∟ Right angle.
⊥ Perpendicular to.
∥ Parallel to.
○ Circle; circumference; 360°.
⌒ Arc; arc of a circle.
△ Triangle.
□ Square.
▭ Rectangle.

Apothecary Symbols

℈ ss. ½ Scruple.
℈ i. or ℈ j. 1 Scruple.
℈ i. ss. 1½ Scruples.
ʒ ap. Dram, apothecaries'.
ʒi. or ʒj. 1 Drachm.
℥ ap. Ounce, apothecaries'.
℥ ss. ½ Ounce.
℥ i. or ℥ j. 1 Ounce.
℥ i. ss. 1½ Drachms.
℥ ii. or ℥ ij. 2 Drachms.

Miscellaneous Symbols

℞ Minium or drop.
ʒ av. Dram, avoirdupois.
ʒ fl. Dram, fluid.
ʒ t. Dram, troy.
℥ av. Ounce, avoirdupois.
℥ fl. Ounce, fluid.
℥ t. Ounce, troy.
∇ (del). Directional differentiator which, when applied to a scalar function of space, gives the greatest rate of change of the function in magnitude and direction at every point.
⬡. Benzene, C_6H_6.
♀. Venus; female.
♂. Mars; male.
φ. Fluidity; angle.
"606". See arsphenamine.

Abbreviations and Contractions

. Free energy (Helmholtz); atomic weight; surface area; maximum work of a thermodynamic system; area.
. Maximum work; Helmholtz free energy; Argon.
Ångstrom unit; see Å.
. Atmosphere, 45° latitude.
. Normal atmosphere.
. Ångström Unit.
Activity; ampere, in sub-units; acid; linear acceleration.
Van der Waal's pressure constant; capillary constant; activity; acceleration.
). Indication that electrical units are based on International ohm and ampere as defined by silver voltmeter.
. n^{th} power of a (Mathematics).
. n^{th} root of a (Mathematics).
. *Ana*, of each (Apothecary).
b. Alabamine.
bs. Absolute.
bt. About.
.c. Alternating current.
Ac. Acetyl; Actinium.
cet. Acetone.
cet. a. Acetic Acid.
AcH. Acetaldehyde.
AcOH. Acetic acid.
ddn. Addition.
Ag. Silver.
.h.m. Ampere hour meter.
A.I.E.E. American Institute of Electrical Engineers.
Al. Aluminum.
Al. Alcohol.
ale. Alcohol.
alk. Alkali; alkaline.
alky. Alkalinity.
alt. Altitude.
Am. Amyl.
amal. Amalgam; amalgamated.
amor. Amorphous.
amorph. Amorphous.
amp. Ampere.
amt. Amount.
AMU. Atomic mass unit, equals the mass of hydrogen atom divided by atomic mass of hydrogen.
anh. Anhydrous.
anhyd. Anhydrous.
antilog. Antilogarithm.
ap. Apothecaries'.
A.P.I. American Petroleum Institute.
app. Apparatus.
applicat. *Applicatio*, an application (Apothecary).
appr. Approximately.
approx. Approximate; approximately.
aq. *Aqua;* aqueous; water.
aq. reg. Aqua regia.
A.R. Analytical reagent grade.
Ar. An aryl radical.
arom. *Aromaticus*, *-a*, *-um*, aromatic (Apothecary).
As. Arsenic.
as-. Asymmetric or unsymmetrical.
A.S.T.M. American Society for Testing Materials.
asym. Asymmetrical.
A.T. Ampere turns.
at. Atomic.
atm. Atmosphere; atmospheric.
atmos. Atmosphere; atmospheric.
At. No. Atomic number.
At. Wt. Atomic weight.
Au. Gold.
A.U. Ångström unit.
aux. Auxiliary.

Av. Average.
av. Avoirdupois.
avoir. Avoirdupois.
A.W.G. American wire gauge, standard for gauging wire sizes.

B. Extensive (total) property in general; Boron.
B. Magnetic induction; thickness of fluid film.
b. Van der Waal's volume constant.
b. Boiling point.
Ba. Barium.
bacteriol. Bacteriological.
bar. Barometer.
bbl. Barrel.
bd. Board.
Be. Beryllium.
Bé. Beaumé.
B.E.S.A. British Engineering Standards Association.
bet. Between.
B.G. Birmingham gauge (hoop & sheet).
B.H.N. Brinell hardness number.
Bhn. Brinell hardness number.
b.h.p. Brake horse power.
Bi. Bismuth.
bl. Blue.
B/L. Bill of lading.
blk. Black.
blksh. Blackish.
blsh. Bluish.
B.M. Board measure.
B/O. Bad order.
B.O.D. Biochemical oxygen demand.
b.p. Boiling point.
B.P. British Pharmacopeia.
B.P. Add. British Pharmacopeia Addendum.
B.P.C. British Pharmaceutical Codex.
Br. Bromine.
br. Brown.
brnsh. Brownish.
B. Th. U. British thermal unit.
B.T.U. British thermal unit.
Bu. Butyl (normal).
bu. Bushel.
B.W.G. Birmingham wire gauge.
B.X. Flexible armored electrical cable.
Bz. Benzoyl.
bz. Benzene.
BzH. Benzaldehyde.
BzOH. Benzoic Acid.

C. Centigrade; coefficient (of discharge, etc.); heat capacity; capacity; Carbon.
C. Concentration; electrostatic capacity; with subscript; molecular heat capacity.
c. Centigrade.
C_p. Heat capacity per mol (molecular heat) at constant pressure.
C_v. Heat capacity per mol (molecular heat) at constant volume.
c. Carat; centi-; cold; velocity of light in vacuo; capacity.
c. Velocity; concentration; specific heat; heat capacity of the substance; velocity of light in vacuo.
c_p. Heat capacity per gram (specific heat) at constant pressure.
c_v. Heat capacity per gram (specific heat) at constant volume.
Ca. Calcium.
ca. candle.
ca. Circa; about; approximately.
c.a.f. Cost and freight.
cal. Calorie (gram).
calc. Calculate.
calcd. Calculated.
calcg. Calculating.
calcn. Calculation.
Cb. Columbium.
cc. (c.c.). Cubic centimeter.
CCH. Industrial calcium hypochlorite.
c. cm. Cubic centimeter.
Cd. Cadmium.
cd. Cord.
c.d. Current density.
Ce. Cerium.
Cent. Centigrade.
cf. Confer, compare.
c.f.m. Cubic feet per minute.
cgm. Centigram.
c.g.s. Centimeter-gram-second system of units.
c.g.s.e. C.g.s. electrostatic system.
ch. Chain.
chem. Chemical.
chl. Chloroform.
C.I. Color index; classification of dyes by number made by the British Society of Dyers & Colourists.
C.i.(C.j.). 1 Gallon (Apothecary).
c.i.f. Cost, insurance and freight.
cir. Circular.
circum. Circumference.
cit. a. Citric acid.
C. j. 1 Gallon (Apothecary).
Cl. Chlorine.
cl. Centiliter.
cm. Centimeter.
cm^2. Square centimeter.
cm^3. Cubic centimeter.
c.m. Circular mil.
CMS. Chrome-manganese-silicon alloy steel.
Co. Cobalt.
coef. Coefficient.
col. Colorless.
coll. Colloidal.
colly. *Collyrium*, an eye lotion (Apothecary).
colog. Cologarithm.
colorl. Colorless.
com. Commercial.
com'l. Commercial.
comm'l. Commercial.
compd. Compound.
compl. Completely.
compn. Composition.
conc. Concentrated; concentrate.
concd. Concentrated.
concn. Concentration.
cond. Condensing; conductivity.
cont. Contains.
const. Constant.
contg. Containing.
cor. Corrected.
cos. Cosine.
cos^{-1}. Arc or angle whose cosine is——; anti-cosine of; inverse cosine of.
cosec. Cosecant.
cosh. Hyperbolic cosine.
$cosh^{-1}$. Inverse hyperbolic cosine.
cot. Cotangent.
cot^{-1}. Arc or angle whose cotangent is ——.
coth. Hyperbolic cotangent.
$coth^{-1}$. Inverse hyperbolic cotangent.
covers. Coversed sine.
c.p. Chemically pure.
c.p. Candlepower; circular pitch; center of pressure; chemically pure.
c.p.s. Cycles per second.
Cr. Chromium.
cr. Crystalline.
cr. Cold rolled.
crit. Critical.
cry. Crystalline; crystals.
cryst. Crystalline; crystals.
crystd. Crystallized.
crystn. Crystallization.
CS. Commercial standard.
Cs. Cesium.
csc. Cosecant.
csc^{-1}. Arc or angle whose cosecant is ——.
csch. Hyperbolic cosecant.
$csch^{-1}$. Inverse hyperbolic cosecant.
ctn. Cotangent.
CTU. Centigrade thermal unit.
Cu. Copper.
cu. Cubic.
cub. Cubic.
cu. cm. Cubic centimeter.
cu. ft. Cubic foot.
cu. in. Cubic inch.
cu. m. Cubic meter.
cu. yd. Cubic yard.
cwt. Hundred weight.
cyl. Cylinder.
C.Y.O. Constant yield oil (q.v.).

D. Deuterium; diffusion coefficient; diameter.
D. Diffusion coefficient; density; diameter.
-d. Ending of compounds containing deuterium, e.g. ammonia-d, NH_3D.
d. Derivative of, differential (Mathematics); decomposes; dextrorotatory; deci-.
d. Diameter; distance; density; differential, as dx.
d_c. Critical density.
$d_{t_2}^{t_1}$ Specific gravity at temperature t_2 with reference to water at temperature t_1.
da. Day.
db. Decibel.
d.c. Direct current.
dec. Decomposes.
deci-. Prefix meaning $\frac{1}{10}$.
decompn. Decomposition.
def. Definition.
deg. Thermometric degree, on the Centigrade scale unless the contrary is indicated.
deka-. Prefix meaning ten.
deliq. Deliquescent.
den. Density.
dens. Density.
deriv. Derivative.
det. Determine.
det'd. Determined.
detg. Determining.
detn. Determination.
dg. Decigram.
diam. Diameter.
dibas. Dibasic.
di-H. Dihydrogen.
dil. Dilute.
diln. Dilution.
dimorph. Dimorphous.
disag. Disagreeable.
dissd. Dissolved.
distd. Distilled.
distg. Distilling.
distn. Distillation.
dk. Dark, deka-.
dkg. Dekagram.
dkl. Dekaliter.
dkm. Dekameter.
dkm^2. Square dekameter.
dkm^3. Cubic dekameter.
dks. Dekastere.
dl. Deciliter.
dm. Decimeter.
dm^2. Square decimeter.
doubt. Doubtful.

dos. *Dosis*, a dose (Apothecary).
D.O.T.G. Diorthotolylguanidine.
d.p. Diametral pitch; double pole.
DPG. Diphenylguanidine.
dr. *Drachma*, a drachm, dram (Apothecary).
dr. ap. (℥ ap.). Dram, apothecaries'.
dr. av. (℥ av.). Dram, avoirdupois.
dr. fl. (℥ fl.). Dram, fluid.
dr.t. (℥ t.). Dram, troy.
ds. Decistere.
dwt. Penny weight.
dx. Differential of x (Mathematics).
Dy. Dysprosium.

E. Energy of activation; electromotive force.
E. Energy; intrinsic energy; potential difference, especially electromotive force of voltaic cells; with subscript: single electrode potential; efficiency; modulus of elasticity in tension.
E (Script). Electromotive force.
E_0. Mean translational energy of molecule of ideal gas at 0°C.
E_R. Reducing intensities referred to normal hydrogen electrode, measured in millivolts.
e. Electronic charge; charge equal and opposite in sign to that of an electron; base of natural or Naperian system of logarithms; efficiency.
e. Quantity of electricity, especially electrostatic charge; with subscript: single electrode potential; electronic charge.
ℯ (ℯ). The number 2.7182818+; base of Naperian or natural system of logarithms; eccentricity of a conic section.
effl. Effloresent.
efflor. Efflorescent.
e.g. *Exempli gratia*, for example.
e.h.p. Effective horse power.
E.L. Elastic limit.
elec. Electric, electrical.
e/m. Ratio of charge of an electrified particle or ion to its mass.
emer. Emerald.
e.m.f. Electromotive force.
e.m.u. Electromagnetic units.
equil. Equilibrium.
equiv. Electrochemical equivalent.
Er. Erbium.
est. Estimate.
estd. Estimated.
estg. Estimating.
estn. Estimation.
E.S.U. Electrostatic system of units.
e.s.u. Electrostatic units.
Et. Ethyl, C_2H_5—.
et seq. *Et sequentes;* and the (pages) following.
etc. *Et cetera*, and so forth.
eth. Ether.
eth. acet. Ethyl acetate.
Et_2O. Ethyl ether.
Eu. Europium.
e.v. Electron volt.
ev. Evolves.
evap. Evaporate; evaporation.
evapd. Evaporated.
evapg. Evaporating.
evapn. Evaporation.
ex. Excess.
examd. Examined.
examg. Examining.
examn. Examination.
exist. Existence.
evln. Evolution.
exp. Explodes; exponential function.
expos. Exposure.
expt. Experiment.
exptl. Experimental.
exsec. Exterior secant.
ext. Extract.
extd. Extracted.
extg. Extracting.
extn. Extraction.

F. Faraday, 96,494 international coulombs per gram equivalent.
F. Fahrenheit; faraday; friction loss; energy per unit weight; force; total load; fluorine; Gibbs' free energy.
F. Force; free energy (Helmholtz).
F. Farad; Fahrenheit.
F (Script). Faraday, 96,494 international coulombs per gram equivalent.
f. Function; friction factor in Fanning equation; correction factor; fugacity; from; force.
f. Acceleration; activity coefficient, for molar concentration; partititon function.
fahr. Fahrenheit.
f.a.s. Free alongside steamer.
fath. Fathom.
F.C. Fixed carbon.
Fe. Iron.
feath. Feathery.
f.h.p. Friction horse power.
fir. Firkin.
fl. Flakes; *fluidus*, *-a*, *-um*, fluid (Apothecary).
fl. dr. Fluid dram.
fl. oz. Fluid ounce.
floc. Flocculent.
fluores. Fluorescent.
f.o.b. Free on board.
form. Formic.
f.p. Freezing point.
fps. Foot-pound-second system of units.
fpse. Foot-pound-second electrostatic system.
fpsm. Foot-pound-second electromagnetic system.
fr. From.
F.S. Factor of safety.
ft. Foot; *fiat*, let there be made (Apothecary).
ft^2. Square foot.
ft^3. Cubic foot.
ft.-lb. Foot-pound.
fur. Furlong.
fus. Fused.
F(x). Function of x (Mathematics).
f(x). Function of x (Mathematics).
f'(x). Derivative of y = f(x) with respect to x (Mathematics).

G. Gravitational constant; weight per unit time per unit of cross-section, commonly called mass velocity.
$G(= H - TS)$. Thermodynamic potential, Gibbs function, or free energy (Lewis and Randall).
G (Script). Molar conductance.
g. Osmotic coefficient; acceleration due to gravity, standard value; gram; specific conductance.
g. Acceleration due to gravity, as a variable; osmotic coefficient.
g_0. Acceleration due to gravity.
g_n. Acceleration of gravity (normal).
g_s. Standard gravity acceleration, 980.665 centimeters per second squared.
g_{45}. Acceleration of gravity at latitude 45°.
g-cal (g.cal.). Gram-calorie.
Ga. Gallium.
gal. Gallon.
Gd. Gadolinium.
Ge. Germanium.
gel. Gelatinous.
gelat. Gelatinous.
gi. Gill.
gl. Glass.
glac. Glacial.
glit. Glittering.
glob. Globular.
glyc. Glycerin.
gm. Gram.
gold. Golden.
gph. Gallons per hour.
gr. *Granum*, a grain (Apothecary); gray.
gran. Granular.
gr.i. (gr.j.). 1 Grain (Apothecary).
gr. ii. 2 Grains (Apothecary).
gr. ii. ss. 2½ Grains (Apothecary).
gr. i. ss. 1½ Grains (Apothecary).
gr. j. 1 Grain (Apothecary).
grn. Green.
grnsh. Greenish.
gr. ss. ½ Grain (Apothecary).
gutt. *Guttia*, a drop (Apothecary).
gyr. Gyration.

H. Heat content; total heat; enthalpy; Hydrogen.
H. Enthalpy; total heat; heat content; magnetic field strength.
H. Henry.
h. Heat content, total heat, enthalpy; hecto-; Planck's constant of action; hot; degree of hydrolysis; head; height.
h. Height; hour.
h_{fg}. Heat of vaporization.
ha. Hectare.
haust. *Haustus*, a portion (Apothecary).
hcb. Hydrocarbon.
He. Helium.
hex. Hexagonal.
Hf. Hafnium.
Hg. Mercury.
hg. Hectogram.
hhd. Hogshead.
hl. Hectoliter.
hm. Hectometer.
hm^2. Square hectometer.
hm^3. Cubic hectometer.
Ho. Holmium.
hor. (horiz.). Horizontal.
HP. Horsepower.
h.p. Horsepower.
h.-p. High-pressure.
h.p.-hr. Horsepower-hour.
hr. Hour.
ht. heat.
HTH (High Test Hypochlorite). Calcium hypochlorite (70% available chlorine); used as bleach and germicide.
hyd. Hydrolysed.
hydx. Hydroxide.
hyg. Hygroscopic.

I. Integration constant of free energy equation; current; Iodine.
I. Moment of inertia; ionic strength; electric current; intensity of light.
i. Insoluble; van't Hoff coefficient; current.
i. Vapor pressure constant; van't Hoff's factor; heat content, total heat, enthalpy.
ibid. *Ibidem;* in the same place.
I.C.T. International Critical Tables.
I.D. Inside diameter.
i.e. *Id est*, that is.
ign. Ignites.
i.h.p. Indicated horsepower.
Il. Illinium.
In. Indium.
in. Inch; indigo.
in^2. Square inch.
in^3. Cubic inch.
inc. Inclusive.
ind. Indigo.
infus. Infusible.
in.-lb. Inch-pound.
inorg. Inorganic.
insol. Insoluble.
Int. International.
int. Internal.
inter. Intermediate.
Ir. Iridium.
irid. Iridescent.
iridesc. Iridescent.
iso. Isotropic.
isom. Isometric.
isoth. Isothermal.
I.T. Interfacial tension.
I.T. cal. International steam table calorie; $_{1000}^{1}$ international watt-hour.

J. Number of equivalents; radiance.
J. Radiation; mechanical equivalent of heat; gram-equivalent weight.
J_λ. Intensity of monochromatic radiation of wave length λ.
j. Imaginary quantity, e.g. $\sqrt{-1}$.

K. Equilibrium constant; karat; Kelvin, or absolute scale of temperature; moment of inertia; any constant; Potassium.
K. Chemical equilibrium constant; compressibility.
K. Kelvin.
K_s. Solubility product.
$K_{s.p.}$ Solubility product constant.
k. Boltzmann's constant; kilo-, $10^3\times$; kilogram; velocity constant of chemical reaction.
k. Thermal conductivity; velocity constant of chemical reaction; ratio of specific heats.
K_c. Boltzmann's gas constant.
kg. Kilogram.
kg.-cal. Kilogram-calorie.
kg.-m. Kilogrammeter.
kl. Kiloliter.
km. Kilometer.
km^2. Square kilometer.
km^3. Cubic kilometer.
Kr. Krypton.
kva. Kilovolt-ampere.
kw. Kilowatts.
kw.-hr. Kilowatt-hour.

L. Latent heat; coefficient of induction; length.
L. Inductance.
L. Latent heat per mol; self-inductance; solubility product; length.
l. Liter; laevo-rotary; long; length; mean free path of molecule; coefficient of induction.
l. Latent heat per gram; length; mean free path of molecules; with subscript: equivalent ionic conductance "mobility."
La. Lanthanum.
lab. Laboratory.
lat. Latitude.
lb. Pound.
lb. ap. Pound, apothecaries'.
lb. av. Pound, avoirdupois.
lb. t. Pound, troy.
L.C.L. Less than carload.
lcm. Least common multiple.
leaf. Leaflets.
lem. Lemon.
lgr. Ligroin.
Li. Lithium.
li. Link.
lim. Limit.
lin. *Linimentum*, a liniment (Apothecary); linear.
liq. Liquid.
LMD. Log mean difference.
ln. Natural Hyperbolic or Napierian logarithm.
lng. Long.
loc. cit. Mentioned elsewhere in same publication.
log. Logarithm, refers to common logarithm, $\log_{10}$.
$\log_e$. Logarithm to base e, natural, hyperbolic or Napierian logarithm.
$\log_{10}$. Common logarithm, logarithm to base 10.
log M.T.D. Logarithmic mean temperature difference.
long. Longitude.
l.-p. Low-pressure.
lq. Liquid.
lt. Light.
Lu. Lutecium
lum. Luminous.
lust. Lustrous.

M. Modulus of a system of logarithms used especially for modulus of common system of logarithms of base 10 when it equals 0.43429+; mass; molality; molarity; mega; $10^6\times$.
M. Molecular weight; mutual inductance; magnetic moment.
M. Molar concentration.
M $[\alpha]$. Molecular rotatory power.
M $[\omega]$. Molecular magnetic rotatory power.
m. Meter; milli-; hydraulic radius, cross section divided by the wetted radius; rest mass of an electron; meta-; magnetic unit of pole strength; *misce*, mix (Apothecary).
m. Mass; minute.
m^2. Square meter.
m^3. Cubic meter.
m_e. Mass of electron at low velocity.
m_H. Mass of a hydrogen atom.
m_μ. Millimicron; millimicro-.
Ma. Masurium.
manuf. Manufacture.
max. Maximum.
Me. Methyl.
mech. Mechanical.
med. Medium.
meth. Methyl.
meth. al. Methyl alcohol.
m.e.p. Mean effective pressure.
met. Metallic.
MEV. Million electron volts; a measure of nuclear energy, 1.591×10^{-4} erg.
m.e.v. Million electron volts.
mfg. Manufacturing.

fr. Manufacture.
Mg. Magnesium.
mg. Milligram.
mgm. Milligram.
m.h.c.p. Mean horizontal candle power.
mi. Mile.
mic. Microscopic.
micr. Microscopic.
mil. Milliliter, 1/1,000 of a liter.
min. Minute; minium (Apothecary); minimum; mineral.
mist. *Mistura*, a mixture (Apothecary).
mixt. Mixture.
M.K.S. system. Meter, kilogram and second system of units.
ml. Milliliter.
M.L.D. Minimum lethal dose.
m.l.h.c.p. Mean lower hemispherical candle power.
mm. Millimeter.
mm². Square millimeter.
mm³. Cubic millimeter.
mmf (m.m.f.). Magnetomotive force.
Mn. Manganese.
Mo. Molybdenum.
mol. Molecule; molecular.
Mol. Wt. Molecular weight.
mon—H. Monohydrogen.
monobas. Monobasic.
monocl. Monoclinic.
m.p. Melting point.
M.P.N. Most probable number.
m.s.a. *Misce secundem artem*, mix skillfully (Apothecary).
m.s.c.p. Mean spherical candle power.
mv. Millivolt.

N. Mol Fraction, number of molecules; Avogadro's number; Nitrogen.
N. Numeric; number (in mathematical tables); normal; mol fraction.
N. Normal concentration.
No. Avogadro's number.
N_∞. Rydberg's universal series constant.
n. Refractive index; normal; revolutions per unit time; number of mols.
n. Number of mols; with subscript: transport number, refractive index.
N_0. Loschmidt's number.
n_a. Anion transport number.
n_k. Kation transport number.
N.A. Numerical aperture.
Na. Sodium.
Nd. Neodymium.
Ne. Neon.
near. Nearly.
neb. *Nebula*, a spray solution (Apothecary).
need. Needles.
N.F. National Formulary (American Pharmaceutical Ass'n); National Formulary for Health Insurance (Great Britain).
Ni. Nickel.
nit. Nitrate.
no. Number.
NOIBN. Not otherwise indexed by number.
N.T.P. Normal temperature and pressure, 0° C. and 760 mm.
N.W. acid. Nevile and Winther's acid.

O. Oxygen.
o. Ortho-.
oblat. *Oblatum*, a cachet (Apothecary).
obs. Observer.
oct. Octahedral.
octahdr. Octahedral.
o.d. Outside diameter.
odorl. Odorless.
offen. Offensive.
oft. Often.
O.i. (O.j.). 1 Pint (Apothecary).
oil turp. Oil of turpentine.
O.j. 1 Pint (Apothecary).
opt. Optically.
or. Orange.
org. Organic.
Os. Osmium.
O.ss. ½ Pint (Apothecary).
O/W. Oil in water.
oxal. Oxalic or oxalate.
oz. Ounce.
oz.ap. Ounce, apothecaries'.
oz.av. Ounce, avoirdupois.
oz.fl. Ounce, fluid.
oz.t. Ounce, troy.

P. Power, work per unit time; electric power; Phosphorus.
P. Pressure.
[*P*]. Parachor.
p. Para-; pressure.
p. Pressure.
p_c. Critical pressure.
p_r. Reduced pressure.
P.A. Preferential adsorption.
Pa. Protactinium.
pa. Pale.
Pb. Lead.
P.C.E. Pyrometric cone equivalent; the number of the pyrometric cone that softens at the temperature of fusion of the material being heated.
p.ct. Per cent.
Pd. Palladium.
p.d. Potential difference.
perp. Perpendicular.
pet. Petroleum.
p.f. Power factor.
Ph. Phenyl.
pharmacol. Pharmacological.
phys. Physical.
physiol. Physiological.
pil. *Pilula*, a pill (Apothecary).
pk. Peck.
pl. Plates; plural.
Po. Polonium.
pois. Poisonous.
polymorph. Polymorphous.
powd. Powder; powdered.
p.p.m. Parts per million.
ppt. Precipitate.
pptd. Precipitated.
p'p't'd. Precipitated.
pptg. Precipitating.
pptn. Precipitation.
Pr. Praseodymium.
Pr. Propyl.
pr. Prisms.
precip. Precipitated.
prep. Prepare.
prepd. Prepared.
prepg. Preparing.
prepn. Preparation.
prob. Probably.
p.sol. Partly soluble.
Pt. Platinum.
pt. Point; pint.
pulv. *Pulvis*, a powder (Apothecary).
purp. Purple.
pyr. Pyridine.

Q. Heat taken into a system; quantity of electricity.
Q. Quantity; quantity of electricity.
q. Quintal; quantity of electricity.
q. Heat entering a system; quantity per unit time.
q.s. Sufficient to make up to.
qt. Quart.
quad. Quadrilateral.
qual. Qualitative.
quant. Quantitative.
quest. Questioned.
q.v. *Quod vide;* which see.

R. Réamur; radioactive mineral; gas constant per mol; Rydberg's constant; any monovalent radical; resistance.
R. Volume of perfect gas (0° C., A_{45}); gas constant per mole of ideal gas; electrical resistance.
[*R*]. With subscript: molecular refraction.
R'. Radius in minutes of arc.
R''. Radius in seconds of arc.
R°. Radius of a circle in degrees of arc.
r. Resistance; specific gas constant; roentgen unit.
r. Radius; specific resistance; with subscript: specific rotation.
r_G. Specific refractivity.
r_L. Specific refraction.
Ra. Radium.
rac. Racemic.
rad. Radius; radian measure of angle.
rar. Rarely.
Rb. Rubidium.
rd. Rod.
Re. Reynolds number; Rhenium.
recrystd. Recrystallized.
rect. Rectangular.
redsh. Reddish.
refl. Reflection.
reg. Regular.
resp. Respectively.
rev. Revolution.
Rh. Rhodium.
rH. Oxidation-reduction potential.
rhbdr. Rhombohedral.
rhomb. Rhombic or orthorhombic.
R.M.S. (r.m.s.). Square root of mean square.
Rn. Radon.
r.p.m. Revolutions per minute.
r.p.s. Revolutions per second.
Ru. Ruthenium.

S. Entropy; surface; Sulfur.
S. Entropy; solubility; surface area.
s. Stere; second; symmetrical; surface; soluble; scruple.
S.A.E. Society of Automotive Engineers.
s.ap. Scruple, apothecaries'.
sapon. Saponification.
sapond. Saponified.
sapong. Saponifying.
sat. Saturate.
satd. Saturated.
satg. Saturating.
satn. Saturation.
Sb. Antimony.
Sc. Scandium.
sc. Scales.
s.c.p. Spherical candle power.
S.E. Siemens unit.
Se. Selenium.
sec. Second, mean solar unless otherwise stated; secant, secondary.
sec $^{-1}$. Arc or angle whose secant is ——.
sech. Hyperbolic secant.
sech $^{-1}$. Inverse hyperbolic secant.
segm. Segment.
sep. Separate.
sepd. Separated.
sepg. Separating.
sepn. Separation.
s.g. Specific gravity.
sh. Short.
S.H.M. Simple harmonic motion.
s.h.p. Shaft horsepower.
Si. Silicon.
sig. *Signa*, a label (Apothecary).
sim. Of similar composition (Apothecary).
sin. Sine.
sin $^{-1}$. Arc or angle whose sine is ——.
sinh. Hyperbolic sine.
sinh $^{-1}$. Inverse hyperbolic sine.
sl. Slightly.
sld. Solid.
sl. sol. Slightly soluble.
sly. Slowly.
Sm. Samarium.
sm. Small.
Sn. Tin.
sol. Soluble; solution.
soln. Solution.
solv. Solvents.
soly. Solubility.
somet. Sometimes.
sp. Specific.
specif. Specification.
sp.gr. Specific gravity.
sq. Square.
sq.ch. Square chain.
sq.cm. Square centimeter.
sq.ft. Square foot.
sq.in. Square inch.
sq.yd. Square yard.
Sr. Strontium.
st. Steel.
std. Standard.
S.T.P. Standard temperature and pressure, 0° C. and 760 mm.
subl. Sublimes.
suffoc. Suffocating.
sulfd. Sulfides.
sym. Symmetrical

T. Time.
T. Temperature, on absolute Kelvin scale; with subscript: transport number.
T_o. Observed temperature.
T_c. Critical temperature absolute C.; corrected temperature.
T_m. Mean temperature.
t. Troy; metric ton; time.
t. Time; temperature C. (above ice-point).
tc. Critical temperature C.
Ta. Tantalum.
tab. Tablets.
tabl. Tablets.
tan. Tangent.
tan $^{-1}$. Arc or angle whose tangent is ——.
tanh. Hyperbolic tangent.
tarn. Tarnishes.
tart. a. Tartaric acid.
Tb. Terbium.
T.C.C.A. Textile Color Card Association.
t.d.s. *Ter die sumendum*, to be taken thrice daily (Apothecary).
Te. Tellurium.
temp. Temperature.
tetr. Tetragonal.
tetrag. Tetragonal.
tetrah. Tetrahedral.
Th. Thorium.
Ti. Titanium.
Tl. Thallium.
Tm. Thulium.
tn. Ton.
T.N.A. Aniline, 2, 4, 6-trinitro-.
T.N.T. Toluene, 2, 4, 6-trinitro-.
tol. Toluene.
T.P.G. Triphenylguanidine.
tr. Transition.
translu. Translucent.
tri. Trigonal.
tribas. Tribasic.
tricl. Triclinic.
trig. Trigonal.
trim. Trimetric.
tr. pt. Transition point.
T.S. Tensile strength.
Tw°. Degrees Twaddell.

U. Velocity, linear; internal energy; stored energy; Uranium.
U (*E*). Intrinsic energy.
u. Velocity; internal energy, intrinsic energy.
u. Velocity component; with subscript: velocity of ions.
ult. Ultimate.
uns. Unsymmetrical.
ung. *Unguentum*, an ointment (Apothecary).
unst. unstable.
U.S. Universal system of lens apertures.
U.S.P. United States Pharmacopeia.
U.S.P.H. United States Public Health Service.
U.T.D. point. Ubbelhode drop point.

V. Volume; Vanadium.
V. Velocity; volume; potential; potential difference, including Volta potential.
v. Volt.
V_a. Volume of perfect gas (0° C., A_a).
v. Velocity; very; specific volume, volume per unit weight or mass.
v. *Vide*, see; volume; velocity; velocity component.
(v). Indicating electrical units based on International ohm and International volt as defined by standard cell.
v_o. Volume per gram-mole of ideal gas at 0° C and 760 mm. pressure.
v_c. Critical volume.
v_r. Reduced volume.
vac. Vacuum.
var. Variety.
vel. Velocity.
veloc. Velocity.
vers. Versed sine.
VGB. Acetaldehyde-ethylenediamine rubber anti-oxidant.
Vi. Virginium.
viol. Violent; violence.
visc. Viscous.
vitr. Vitreous.
vlt. Volt.
V.M. Volatile matter.
vol. Volume.
volat. Volatilizes.
volt. Volatilizes.

W. Work; electrical energy; Tungsten.
W. Electrical resistance; work done by or on a system.
w. Weight rate, weight per unit time; water; watt.
w. Work done by or on a system; velocity component; Wien's displacement constant.
wh. White.
wh. lt. White light.
W/O. Water in oil.
w.p.c. Watts per candle.
wt. Weight.
W.W. Water white.

X. Force component; potential gradient in electric field.
x. Mol fraction.
[x]. Absolute value of x (Mathematics).
$\bar{x}$. x bar (Mathematics).
x_a. x sub a (Mathematics).
x_{a_1}, x_{a_2}. x sub a sub one, x sub a sub two (Mathematics).
x^{n_1}, x^{n_2}. x to the n sub one, x to the n sub two (Mathematics).
x^{n^2}, x^{n^3}. x to the n squared, x to the n cubed (Mathematics).
Xe. Xenon.
X.U. (X-unit). Siegbahn unit, 10^{-11} centimeters.

Y. Yttrium.
Y. Force component.
Yb. Ytterbium.
yd. Yard.
yel. Yellow.
yelsh. Yellowish.
Y.P. Yield point.
yr. Year.

Z. Impedance.
Z. Force component; gram equival weight; number of molecular collisi per second; atomic number.
z. Valence.
z. Valency of an ion; distance ab datum plane.
Zn. Zinc.
Zr. Zirconium.